

My life as an entrepreneur

Profit by loss

My life as an entrepreneur

Part 2: systems of differentiation

Cordys, 21st century

Jan Baan

CORDYS

Vanenburg Group B.V.

1st edition

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To
My dear wife Rinie

and

Our beloved children
Gert Jan
Arianne
Jan Peter (in memory)
Paul
Marieke
Jan Willem
Ardjan
Bernhard

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Preface part II:

This second part of my autobiography will describe my business activities in the first decade of this century. However, before we start, I want to share the most radical and sad change within our family, what has - by far - given the biggest impact to us during this decade; or even more, during my entire life. This was the sudden death of our beloved son Jan Peter, the third child in our family. Jan Peter worked as a missionary in Nigeria and was killed by a robbery attack at his house in Onuenyimu Nigeria, at the Age of 32.

In chapter 1, I describe some personal experiences from his life. My wife and I still feel the pain of this grief every day, but we may also experience the hope that Jesus Christ acquired at the cross of Golgotha for the gift of the eternal life for his children. Despite the many painful moments, we have also experienced comfort from our large family, which surrounding us as a wall of love around us.

Systems of differentiation in the 21st century

In part 2 of my autobiography, I described the story of Baan Company and how we developed our strategy in the 20th century and were the biggest competitor to SAP. I concluded that traditional ERP had become antiquated, mainly because the software developments occurred before the internet existed. In 1998, as CEO, I said goodbye (after 20 years) to Baan Company to concentrate on internet-based software, focusing on business process integration.

The legacy ERP systems remained important for the relational data and the logistics business process logic. The second part of my autobiography starts here. In chapter two, I will describe the developments of my second startup Cordys. The basis of this second company's vision has a history in my investments in WebEx and TopTier.

Infor had taken over Baan Company, and as a result, my investments in TopTier and WebEx could no longer be used as components in Baan Company's slipstream. Our investments in these companies were very lucrative, but most beneficial were the lessons learned in innovation, for which I am thankful.

In 2000, SAP struggled to deliver modern front-end functions for their yearly Sapphire event. We were able to demonstrate the TopTier solution for SAP in Walldorf. The demo was a breeze, and SAP's CEO Hasso Plattner was directly involved, which resulted in a direct bid from SAP to take over TopTier for US \$400 million. Over time, the Vanenburg Group's majority interest in TopTier had been diluted to a (still substantial) minority interest due to the participation of one other VC. Our ROI, however, was relatively high if you take

TopTier's revenue of only \$10 million and a negative EBITDA of \$10 million into consideration.

Burning my ships

Because I resolutely burned all the ships behind me at the end of the last century, I could freely operate and build the Cordys Business Operations Platform (BOP) in a disruptive way without being hindered by any legacy components or structures. These proceeds were a welcome cash injection and allowed us to spend it on R&D development in Cordys. Even though we were no longer part of a world-leading ERP company, we did use all our knowledge and experiences as a starting point for the Cordys platform. The fact that quite a few former Baan employees – who had been with Baan since the beginning – joined Cordys early on, helped ensure that we could continue our knowledge of the core components of the ERP concept. After all, it concerned integrating the back-end business processes, of which ERP remained the most important component. This was a completely different premise than the other Business Process Management (BPM) players of those days, such as Pega, Appian, Progress, and Tibco.

In the meantime, we used our tight relationship with WebEx to our advantage. In addition to the business processes in our business operations platform, we asked them to consider completing the workflow processes and provide an ability to integrate them in a WebEx meeting. It was a bold and innovative proposition that unfortunately didn't go anywhere as WebEx was sold to Cisco, which immediately ceased our close relationship with the two WebEx founders. Although we didn't benefit of the sale to Cisco, the sale of our interest in WebEx over the years brought us a considerable amount of money, which we subsequently used for our investments in Cordys.

Hindsight January 6, 2022

This autobiography has taken me years to write, adjust and align with my past, current, and future business endeavors. What started as one complete book needed a bit more structure. Ronald Haantjes and Arjen Westerink supported me in fine-tuning it for a better and legible English version. As former Baan, Vanenburg Group and Cordys employees, they provided me with some good suggestions and motivated me to publish the autobiography in three parts to match the technology waves invented by the Gartner Group over the past 40 years. I followed the given advice during the recent Christmas holidays and divided my autobiography into three parts. This part, part two, in particular, needed more attention to underline the important developments and innovations we made during this period with Cordys and what became the basis for what we now call the third wave with the 'systems of innovation.'

In part three of my autobiography, you can read what we realize with modern microservices - in the third wave - with my third company Vanenburg. I now feel that my autobiography has the structure and completeness I have been looking for. It is important for me to clearly describe my activities after leaving Baan Company and starting with Cordys in this part of my autobiography. With Cordys, we took a different approach to address the same business problems for customers as we did with Baan Company.

Fortunately for me, I had all my time available to focus on this, and without any shareholder involvement, I could be more innovative than ever before. Afterward, I saw the benefit of having all the business experiences, and the dominant role Baan Company played in the ERP wave with their transactional systems in the 90s. I used those experiences to build an innovative business operations platform from scratch. I was also very fortunate that many talented and experienced Baan employees were open to following me in this endeavor.

The mentioned elements (time, money, authority, and talent) ensured we had a unique platform with integrated IT components based on the *'one stack'* approach by 2007. Analysts praised us for this, but we were still too early for most of the market. This concept was still unthinkable for most CIOs, difficult to understand, and often too complex to implement.

Chapter 2 describes the benefit of our investments in the Israeli startup TopTier, one of the first internet portals, which we used to build our first enterprise service bus (ESB) to connect the Baan slipstream's components.

Chapter 3 explains the changing focus of ERP silos of the past into *'end-to-end'* business processes and the meaning of a business operations platform in that shift.

Chapter 4 describes our disruptive innovation initiatives to build one of the most complex internet-based business operations platforms from scratch, all in one stack to integrate the legacy transactional systems like ERP, CRM, PLM, SCM, and WM, into an *'end-to-end'* business process.

Chapter 5 explains BPM as the standard for human & system workflow, will describe the difference between handling transactional and human-centric processes with case management. In particular, our innovative approach to building a collaborative workspace meant a breakthrough, which mainly the experienced analysts.

Chapter 6 can be seen as the foundation for a new disruptive innovative initiative, which we named the Cordys Process Factory (CPF). Based on participation in webEx, we investigated

the benefit of bringing the BPM 'end-to-end' processes one step further in the downstream collaborative workflow apps for the supply chain management. This initiative became late on the foundation for Vanenburg, explained in part 3 'systems of innovation.'

Chapter 7 explains our natural ups and downs and frustrations at the end of being adopted in the OpenText family, in which I again have seen the be-all and end-all of the innovation in disruptive business products. Sometimes those big M&A enterprises are united, as some call, around the 'graveyard of legacy products. Not only is 'disruptive innovation' over, but 'sustainable innovation' is also over and replaced by 'efficient innovation' to milk the installed base cows. Participants are bounded with the vendor lock-in handcuffs. Customer intimacy is over, and those vendors' revenue and employees are no longer growing, but EBITDA and market cap are still increasing because the matrix is king. And then the only growth factor are coming from mergers & acquisitions. In chapter 8 (skunk works), I describe these processes in more detail.

Chapter 8 about 'Skunk Works' tells what I can learn as an entrepreneur, building tools for helping knowledge workers to improve their businesses by adopting the benefit of the internet. Also, my lessons learned from the book 'The Innovator's Dilemma', by Clayton Christensen, around disruptive innovation. Here, I give an overview of my 44 years of the entrepreneurial journey by explaining the three technology waves, called by Gartner as 1. 'systems of record'; 2. 'systems of differentiation, and 3. 'systems of innovation'.

Chapter 9 is an overview of my 44 years of the entrepreneurial journey by explaining the three technology waves, called by Gartner as 1. 'systems of record'; 2. 'systems of differentiation, and 3. 'systems of innovation'. Necessary for the near future is to capture all the data elements out of the logic of the applications together into an 'end-to-end-dynamical workflow process in which the semantical data layer will be propelled by machine learning and connected with IoT to improve the productivity of the digital knowledge workers in the supply chain.

Another way to describe this is every time quicker moving high-tech waves are becoming more and more influential. Then we're looking no longer to only cost reduction of IT, which maybe can realize a cost reduction of 1% of the revenue, but if the productivity of the knowledge workers will increase to what Peter Drucker profited at the end of last century to double productivity than the EBITDA of those enterprises can triple which will propel the market cap of the company's shares value.



Jan Lievens: Study of an old man ± 1629
Leiden 1607 - Amsterdam 1674



Frans Hals : the Hotinov-Hals painted 1643-45
Antwerpen ± 1581-84 - Haarlem 1665

The interviews in appendix B picture some more personal emotions around my motivations for technology choices and some of my struggling in my Cordys period. While we were in lockdown due to the numerous Covid-19 cases in the Netherlands, I had to work more from home than I normally do. My wife took the opportunity and encouraged me, quite urgently, to clean up my archive. While doing so, I came across several interesting interviews I had forgotten about. In these interviews in 2007 - 2010, several professionals shared their opinion about the unique position that Cordys fulfilled. I have shared these interviews for those interested in how business process experts see this.

In addition, I came across a remarkable interview with Olf Kinkhorst. He was a man with a vision, a pioneer in chain computerization, and as director of BKWI, Kinkhorst developed the popular Dutch DigiD, an IT project that cost less than € 100,000 at that time. Olf was a true professional, and I have had the pleasure to have several profound conversations with him about the design of cloud solutions, that enable the business processes. He once interviewed me. See in the paragraph: 'Vision is bullshit!'

Shortly months after this interview, he passed away in Lunteren. Kinkhorst appreciated the antique design of my office at Kasteel De Vanenburg, especially the choice of my paintings and some unique bibles that surprised him. My 17th-century art collection in a 17th-century castle was my hobby to counter the innovative drive and execution of new solutions for tomorrow as an IT pioneer. Seeing this interview with a photo of my beautiful art collection again brought back some nostalgia. These valuable items we owned were sold soon after the interview took place, in 2008.

Upgrade our Cordys Process Factory as a disruptive innovation initiative

As you can read in chapter 5, about our new initiative called Cordys Process Factory, soon we struggled with our investor Argonaut about this low-code platform initiative for citizen development. They hardly had any insight into our products and couldn't see the opportunities ahead of us because of their distinctiveness. As a result, the time it would take us to receive a positive EBITDA disappointed them. They didn't understand the time required for large Platform-as-a-Service (PaaS) companies such as Salesforce, which took 10 years while supported by hundreds of millions of dollars of investments before they were successful and profitable.

Argonaut wanted to stop the investments in our promising initiative for CPF, which created a big burn rate on our EBITDA but gave me the chance to attract this in private. Through this transaction we also obtained our current strategic relationship with Valeo - Vanenburg's market maker. Valeo, headquartered in Paris, is a leading automotive player with more than 110,000 employees. My purchase of CPF from Cordys formed the basis for my third startup, Vanenburg. Without legacy IT as a burden, I could focus on a new area: this time, the disruptive systems of innovation. Our experience with Valeo as one of the world's most prominent automotive tier one players functioned as a market maker, similar to our experience with Boeing in the 1990s. Over the past ten years, our exciting relationship with Valeo has evolved. We now see that the cloud platforms, especially Google, are pushing us to realize creative, valuable, and affordable innovations in building low-code / no-code solutions for customers like Valeo.

This time again, we differentiate ourselves from the existing players, such as Mendix and OutSystems, by providing much more than just a platform. Our approach is primarily to integrate the back-end ERP systems and then renew them step by step to '*end-to-end*' business processes, turning them into '*one version of the truth.*' The knowledge worker's productivity can double by enriching the new dynamic workflow apps with machine learning and linking them to the Internet of Things.

Back in the last century, Baan Company was all about controlling the costs of logistics processes. Cordys' focus was mainly on achieving Operating Excellence (OPEX), allowing us to reduce the total cost of IT significantly through controlling and integrating the legacy

silos. Unfortunately, we were ahead of our time, and CIOs hardly had any understanding of this. After all, *'you won't be fired for using SAP and Oracle'* was the motto back then.

Giving up a luxurious hobby

Besides the real estate of a castle with a unique art collection, I also owned a very modern Falcon jet with tail number PH-VBG (the Dutch Vanenburg Group plane), of which I still have a model in the antique cupboard at my office. The plane allowed me to easily reach all areas of the world, visiting customers, our American business partners, and especially our operations in India. It was run as a business tool for my use or for paying passengers, including the Dutch Royal House.

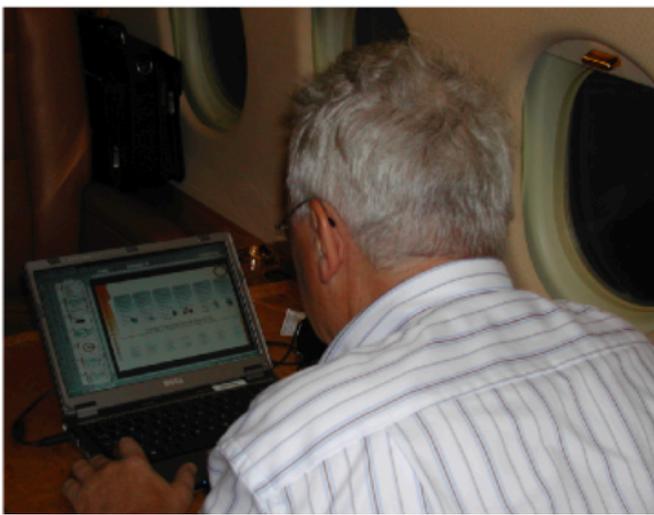
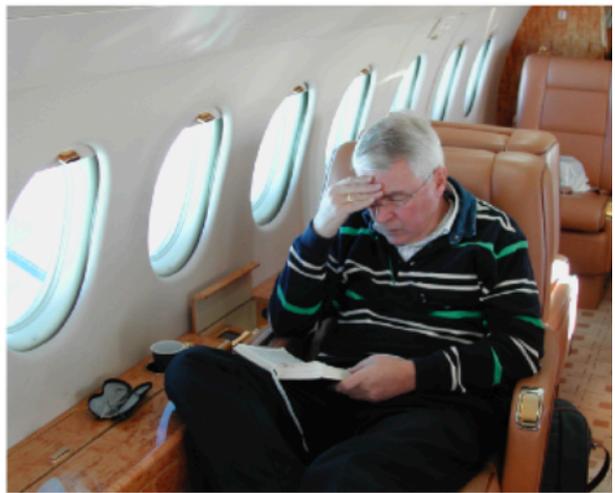
However, the acquisition of CPF required me to hand in my hobbies. I decided to give up this nice, effective, and luxurious private plane and use the proceeds again on investments disruptive innovation in intellectual property; Our IP in Vanenburg.

I did this motivated and without hesitations and have never had any regrets, let alone frustration, although it hurt me a little when I saw a picture of the collection and the plane again during my archiving activities.

The pictures on the next pages are a collage of the plane. It is to give an impression of the usefulness of the plane and is certainly not meant to brag, but more to sketch the contrasts from these very different periods in my business.

The first series is a trip during heavy winter weather through Canada, from the east coast (Hamilton Airport), stopping by our Canadian office and seeing my son Jan Willem. From there we flew to Brazil to visit our customer Embraer, the aircraft manufacturer. After that, because we were nearby, we visited Loma Alta, a village in Bolivia, where we set up an education project with millions of investments for years with Oikonomos, our family foundation.

The second collage is a trip to India (Hyderabad), coupled with a visit to my oldest son, Gert Jan, in Indonesia, who lived with his family on the big island of Papua (formerly Dutch New Guinea). He served the local population as a missionary in the bush in Pass Valley (close to Wamena). After visiting a businessman in Jakarta, on the return journey, we went to India and visited our Hyderabad office and also charitable projects in Chennai, with some personal friends on both trips which have also contributed as sponsors in these projects.





1. Profit by loss

Retrospect Jan Peter's life

The common thread in all three parts of my book are the highs and lows during nearly 45 years of entrepreneurship. I have titled my biography 'profit by loss'. This, in particular, can be applied to this chapter, which is about personal grief, that brought a major change in our family.

On 23rd January 2003 I lost my son Jan Peter, who worked as a missionary in Nigeria and was killed by a robbery attack at his house, at the age of 32. This was, as one can imagine, a very difficult experience. The sadness of his passing goes much deeper than all business setbacks I've experienced combined. Despite his short life, he has left behind a treasure of memories. He died in faith, which has soothed the deep sadness. Nevertheless, I bear this cross with difficulty. We remember Jan Peter with grief in our hearts but also with hope. There is something of an enviable desire from this hope: after all, he has come home, in the father's house with his many dwellings (John 14: 2).



Jan Peter (1970-2003)

Email - October 11th, 2002

Dear family, we are doing well. Last Sunday, I enjoyed carrying out the 'good message' (Onuenyimu Nigeria sermon Lord's supper). As always, I felt inadequate (like a little boy) beforehand, but when I feel the presence of the Lord, there is no better work to think of. To then to be allowed to point the future reserved for those who fear Him (Revelation 7: 9-17)!

Regards Jan Peter

(Revelation 7 was also the text at his funeral service already three months later)

On Thursday, January 30th, 2003, we buried him in Putten. My oldest son Gert Jan (Pastor) had as text for the funeral service Revelation 7 verse 15-17:

Therefore, they are before the throne of God and serve Him day and night in His temple; and He who sits on the throne will overshadow them. They will no longer be hungry and will not thirst anymore, and the sun will not fall upon them, nor any heat. For the Lamb that is in the midst of the throne will feed them and will be their guide to living fountains of waters; and God will wipe away all tears from their eyes.

Some emails

I have taken a few emails that we received some time before the death of our son Jan Peter and that we cherish with love.

March 4th, 2002. Dear Mom and Dad,

I hope you can see that it is not for our own success or pleasure that we moved so far away, (but may it be) that it is for the expansion of God's kingdom. When I think about that, I feel so insignificant, so worthless. How can I ever do anything for that great cause?

I think of Rev. Blok's sermon on 'O that all the Lord's people were prophets...' (Numbers 11:29). There you will read about Eldad and Medad; they also went but prophesied only in a corner in the back, for they had no other choice. That really encouraged me when we were so busy with missionary work as if it were our business. Jan Peter



April 8th, 2002. Dear Mom and Dad,

I had a good Sunday yesterday. It was here the Lord's supper. The Lord wanted to descend low amid all worries. Rarely do I (as someone who is more cognitive -

intellectual - than affective - sensitive) have such sensitive sacramental celebrations. At such a moment, you would indeed want to stay there. Or better: the desire for the Lord and to be for Him (completely) and with Him (forever) can become very strong. 'Seeing Jesus'; there is nothing that can beat that. Away with the world, away with the treasures.

... What is then the Lord's supper description valuable. We often have to make do with a simple sermon here, but at times, the Lord wants to impart a special message. I also experienced it as a confirmation that we can / should be here.

The Lord is still working; also, here!

Greetings and lots of love,

Jan Peter

July 19th, 2002

Preaching still takes me much time. Unfortunately, my perfectionism plays a part in that. In addition, it is because I combine it with much reading about structuring sermons (I hope to use it again in the coursework). In addition to the time and effort (sometimes there is just too much if you know what I mean), it also gives me (sometimes) much joy. Then I think: there is no better work than this. At the same time: there is also no more responsible work than this. You must preach God's word pure ...!

Sometimes you see very clear signs of the spiritual struggle (people getting sick after not following the tradition). However: The Lord is above that. That is also clear from that history (Mark 5). I went (with Simeon as a translator) to someone who had not been coming to church for a while. He has had epilepsy and suspects that this is due to juju spells (from someone who is not pleased with him). He is now terrified that if he goes to church, the epilepsy will come to him again. You then see real fear. This man is a former elder, so not just anyone. It is whispered that he even visited juju makers to undo these forces.

In any case, a group in the village (including some church members) is trying to get juju makers to our village to expose the guilty party (the perpetrator of this evil). Warm regards, JP



August 15th, 2002

Last night I did for the first time home visitation. Very beautiful but also very difficult. All the more because of the cultural/social barriers. All my life, I will not be able to experience what it is like to be a poverty-stricken widow without food to feed small children and to provide care. Or to achieve the temptation of men willing to buy services, and the temptation to remarry but then must have to give up children; etc. Or what the power is of the juju's (idols). As a Westerner, you can only talk about it. To be an elder is condescension and gives responsibility but is also (sometimes) entertaining. Moreover, it also offers many more opportunities in the church community to discuss things.

Regards and love,

Saturday, September 28th, 2002

Tomorrow we have reverend Nkwuda over for the preparation of the Lord's supper. He is our consultant; we hope for a good service. Regarding post-completion, they have scheduled me here. I find this a bit difficult. On the other hand, it is very beautiful. I want to preach about Revelation 7:9-17 (or part of it). I remember the services in the Netherlands; the sermon after the Lord's supper was very focused on sanctification.

Revival to live now entirely for the Lord; to lay down the life of sin and look unto Jesus, the author and finisher of our faith. What better work is it than to promote Jesus? I'm just going to send the mail.

November 26th, 2002.

Dear family, everything is okay with us. On Sunday, I heard Gonda singing 'Those who put in seed with weeping'

I thought that was right. You can sometimes get depressed when you see what is happening around you (in the church).

To stay faithful, and trying to see the Invisible ... To follow then; obey; that's a whole lesson! How great would it be if the sequel were also true: 'will get in the grain with cries of joy.' Because then you would rejoice in the work of the Lord of the harvest!

Jan Peter



Condolence letter from Jan Peter's house servant: the young boy Job Nwiboko

From Job Nwiboko - August 2003

Dear father

How are you feeling by now? Are you getting stronger and stronger in the things of the Lord? Don't feel weak, be strong. I know God will help you.

(Psalm 100) 'Make a joyful shout to the Lord, all you land! Serve the Lord with gladness; His mercy is everlasting, And His truth endures to all generations.' (Psalm 125) 'Those who trust in the Lord are like Mount Zion, which cannot be moved but abides forever.' I don't know what I will say because my life has gone. The wicked people have taken my daily purpose.

(Psalm 142) 'cry out to the Lord with my voice; With my voice to the Lord, I make my supplication. I pour out my complaint before Him; I declare before Him my trouble. Men have hidden a snare for me.'

But the Lord knows everything that is happening on this earth.

As for me, I am doing fine, together with my family. But my heart is not at rest right from that time. I don't know why I am still living, but God knows the purpose of my living on this earth. I am indeed living, but my heart is not there. The life of my father Jan Peter has been taking by the wicked people, and also, I cannot talk to anybody else as I did with him. But the Lord is my Shepherd. He will take care of my life till the time I die and, I am longing to see the blessing of the Lord..

Condolence letter for Jan Peter's wife Gonda from a close Nigerian friend

Onuenyimu, January 28th, 2003, Dear Madam,

Dear Mrs. Gonda. I want to greet you, and may God be with you and care for you. Since the day I woke up to the news that my spiritual father Jan Peter Baan had died, the people became aware that Jan Peter had died, but I myself, I felt as if I myself died, while I am still alive. And I would like to comfort you with what the Bible says, that somebody who left his father and mother and many things because of his God, he then still will get many things.

And what are then these many things? Especially eternal life. And I know that God can give eternal life to you, the children, and your parents. And I myself I hope that one day I will see God and my spiritual father, Jan Peter Baan again.

Since that day, I am not eating well because the whole time I have been discussing in my mind as if I am discussing with my spiritual father Jan Peter because he always told me to be prepared for eternity.

And I am the first one that has registered for the Bible course. The Bible told us that this earth is not our home but that we are still waiting for another home, heaven. And I am praying that we all the time may remember you, Mrs. Gonda, and your children, and also Jan Peter's father and mother. And I remember very well the last discussion with you and my spiritual father, Jan Peter.

I was asking Jan Peter Baan when he could start the course because I was thinking about it all the time. He told me that we could start this Bible course in February. But now, after he died, who shall do the course?

I loved Jan Peter Baan so much because he used to point me to God all the time, that I should look upon Him. My hope is on God, who has promised in the Bible that He will be the father for them who don't have a father, and a Husband for those who don't have a husband. I myself cannot do anything, but God knows even everything that has happened. I hope God will be with you. As everything is darkness now, therefore God is present. Satan tries to spoil everything, but God will not allow him to do so. And if Holland should be like Lagos, then I would come to see you, with your children and your father and mother-in-law. To encourage you and to comfort you because I love you all.

Therefore I invited them recently, on their visit you to come and eat at my home. And it was no matter that my compound is bush, you and your parents in law, liked it. I am writing this letter to show that my heart is with you. I know maybe I will not see you again or write a letter again. But God will be with you. And I would like it if you're telling Jan Peters father and mother that I feel sorry because of their son's loss. Let them take heart. I know that Jan Peter now stays forever with God. May God bless the work he did in this world. May God help you. If I could do anything to support you, I would try. I don't have anything to give. I even can die myself.

But I can promise you that I will pray for you and your family, that God will do everything. And everything I will take it and bring it in God's hand. May God be in control and take care of you and the children. Don't lose hope because God is with you. May God help us run the race in this world so that we may come to God forever in the end. Thank you. Deacon Ewogu Joseph.

In his position as director of our Oikonomos foundation, Jan Peter has laid the foundation for sponsoring our educational activities in India. As a token of respect, this school with a hostel in Hyderabad was named to him after his death.

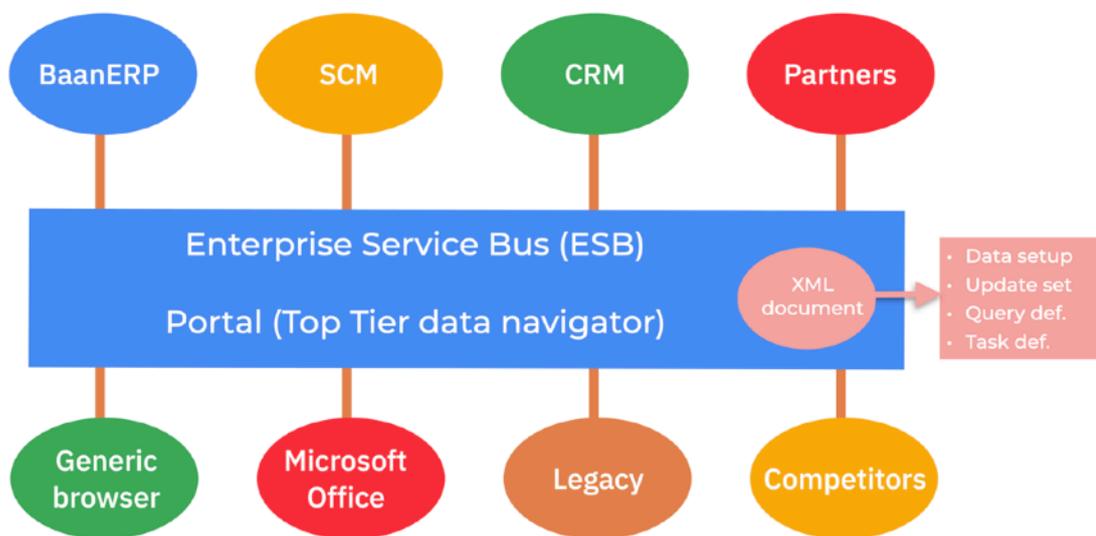
See in the appendix of this book more information on the Jan Peter Memorial School.

2. From ERP to 'end-to-end' business processes

Top Tier: One of the first internet portals

After leaving Baan Company in July 1998, I occupied myself with venture capital activities at Vanenburg Group. Particularly the acquisition of the Israeli start-up TopTier in 1998. In 1999, I had a conversation with Theodoor van Donge in which he told me about his challenges within Baan Company. The solution we found for this problem has turned out to be one of the most important decisions in my career and laid the foundation for Cordys. Vanenburg Group proposed to acquire Theodoor and his team from Baan and, in return, to build a new integration tool for BAAN-IV, which was their cash cow at that time.

My proposal to acquire Theodoor and the other research employees was an attractive prospect for both parties, so Baan Company agreed readily. It helped them focus more on Development instead of Research, and in addition, they now had a beneficial middleware product for free. Within Vanenburg Group, two of the most exceptional people I have met in my professional life started to work together: Theodoor van Donge and Shai Agassi, the founder of TopTier. And, they got along very well, with extraordinary new solutions as a result.



Vanenburg Group was a Early Bird in 1999 with ESB (Enterprise Service Bus)

Analysts saw TopTier's web-based portal as the new market leader for the mid-segment. Shai Agassi's innovative way of looking at integration combined with Theodoor's knowledge of componentized application development and understanding of enterprise application integration helped reach new heights of technological innovation. They couldn't have done this without the efforts of the research team. Unexpected business opportunities were unfolding. One of these innovations was called the Enterprise Service Bus (ESB).

State of Israel jubilee award

1998 was the year of jubilee - the 50th birthday of the State of Israel.

On October 15, 1998, my brother Paul and I were invited by a group of international business people who placed their confidence in Israel's growing economy and contributed to its economic independence at the prime minister's jubilee business summit. The motivation for our invitation was related to the following:

1. The benefit of our investments in Israel's startup TopTier, one of the first internet portals we used to build our first 'enterprise service bus' to connect the Baan slipstream's components.
2. Our office in Kfar Saba has advanced state-of-the-art enterprise management, product marketing, and information technology in Israel.
3. Our relationship with the Technion in Haifa around our 'dynamic enterprise modeling' tools for bridging the gap between business and technology.
4. Oikonomos foundation contributed to the Yad Vashem Holocaust museum to build their database system and participated with former prime minister Shimon Peres in a program for peace sharing with collaborative IT online development activities between Palestinian and Israeli's programmers.

The State of Israel recognizes Baan company as one of the visionaries who have done the most to facilitate Israel's integration into the global economy.



Paul and I received the State of Israel Jubilee Award on October 15, 1998 from then-Israeli Prime Minister Benjamin Netanyahu for our business activities in Israel



**STATE OF ISRAEL
JUBILEE AWARD**

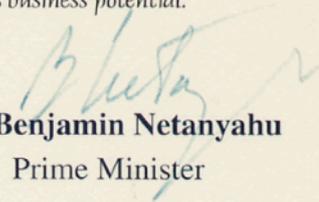
**Jan Baan
Baan Company
Paul Baan
Baan Brothers Foundation**

This award honors a select group of international business people who have placed their confidence in Israel's growing economy and contributed to its economic independence.

The Baan brothers have advanced the state of the art in enterprise management, product marketing, and information technology in Israel. Among their many Israeli initiatives is the establishment, at the Technion in Haifa, of the Center for Dynamic Enterprise Modeling, dedicated to bridging the gap between business and technology. Their diverse development and investment initiatives in Israel include venture capital funds and a range of high tech companies delivering software products and services.

The State of Israel recognizes the recipient as one of the visionaries who have done the most to facilitate Israel's integration into the global economy and to realize its world-class business potential.

October 15, 1998
כ"ה בתשרי התשנ"ט
Jerusalem Israel


Mr. Benjamin Netanyahu
Prime Minister

For my brother Paul and me, it was an honor on 15 October 1998 to receive the prestigious State of Israel Jubilee Award from Prime Minister Benjamin Netanyahu. My friends had flown with us to Israel; we participated in a software event here. Our visits to Israel were

fairly regular because there was much to learn here. We had our own office, privately funded, in Kfar Saba.

We also had a close relationship with Technion - Israel Institute of Technology in Haifa. In addition, we collaborated with the Holocaust Museum Yad Vashem in Jerusalem, where we sponsored a project for their database solution with our technology. With former Prime Minister Shimon Peres, we had a partnership for a peace project with Jordan. The use of technology made it possible to arrange remote collaborations between employees in both Jordan and Israel. Our relationship with TopTier was interesting. We had a majority interest in this beautiful company that was the first to put a portal on the market.

Shai Agassi & Hasso Plattner

I had a very good and rewarding relationship with TopTier's founder Shai Agassi. Shai was later able to interest Hasso Plattner from SAP for TopTier. After the takeover of TopTier by SAP, the technique was used for their SAP-NetWeaver product. Shai became President of the Products and Technology Group (PTG) until 2007 at SAP. Then he became the Founder of Better Place, an initiative for electric cars. The Foreign Policy magazine named Agassi one of the top 100 most influential people in 2010.

The TopTier portal was successfully linked to the BAAN-IV package, but this initiative was nevertheless shelved within Baan Company. Shortly afterward, Baan's most important rival, SAP, faced some challenges. Their R&D department was struggling to fulfill their promise of coming up with an internet version of their product in time for the annual user conference Sapphire.



Shai Agassi

ex-CEO of TopTier,
and former member
of the Executive
Board of SAP

At SAP [Shai Agassi] was responsible for SAP's overall technology strategy and execution. In this leadership position, he oversaw the development of the integration and application platform SAP NetWeaver, SAP xApps packaged composite applications, SAP SRM, and SAP Business One.

Before his appointment to the SAP Executive Board, Agassi was CEO of SAP Portals and later of the combined company SAP Markets and SAP Portals, which previously operated as a fully owned subsidiary of SAP AG. He was appointed to the SAP Executive Board in 2002. Together with the head of the Application Platform & Architecture (AP&A) group, Peter Zencke, Agassi co-led the Suite Architecture Team, which aligns the software architecture across all SAP solutions.

They started to look externally, and TopTier appeared to be offering a good solution. At the last moment, two weeks before Sapphire, the project to integrate SAP and TopTier started.

As a result of their experience with Baan, the integration was a piece of cake for the people at TopTier. The SAP board became very enthusiastic, and the Sapphire event was saved.

In 2000, Shai Agassi was able to contact Hasso Plattner from the TopTier branch in Palo Alto. It clicked immediately between Hasso and Shai. Shai was able to interest Hasso with his vision and what he had built in the TopTier product. Even though we were the majority shareholder, Hasso did not want to have contact with me. In retrospect, he was looking for a solution because of the problems mentioned above. Hasso invited Shai for a trip in his private plane from San Francisco to Walldorf in Germany.

Just as it fared with me a few years ago, Hasso was very impressed by Shai Agassi. No wonder because Shai is very intelligent and has an enormous charisma to share his vision in terms of his portal. For this, Shai worked together with the team of my CTO, Theodoor van Donge on the first delivery for an enterprise service bus for Baan Open World to enrich the Baan ERP product with the TopTier portal. Hasso was very interested in whether Shai would realize this with the SAP ERP product in the short term, especially to solve his above problems. It had to be realized for Sapphire within a few weeks.

Immediately after landing, Shai spoke with Theodoor van Donge. And we were able to arrange this in the short term. Remember, we had more than 200 engineers available for this within Cordys who knew the Baan-IV product in every fiber of their being. All the old Baan engineers who had transferred to Cordys a few years ago and now switched from Baan 4-GL to Java in terms of development. We were able to deploy enough resources directly because all these people were working on a generic platform, for which at that time there was no customer obligation.

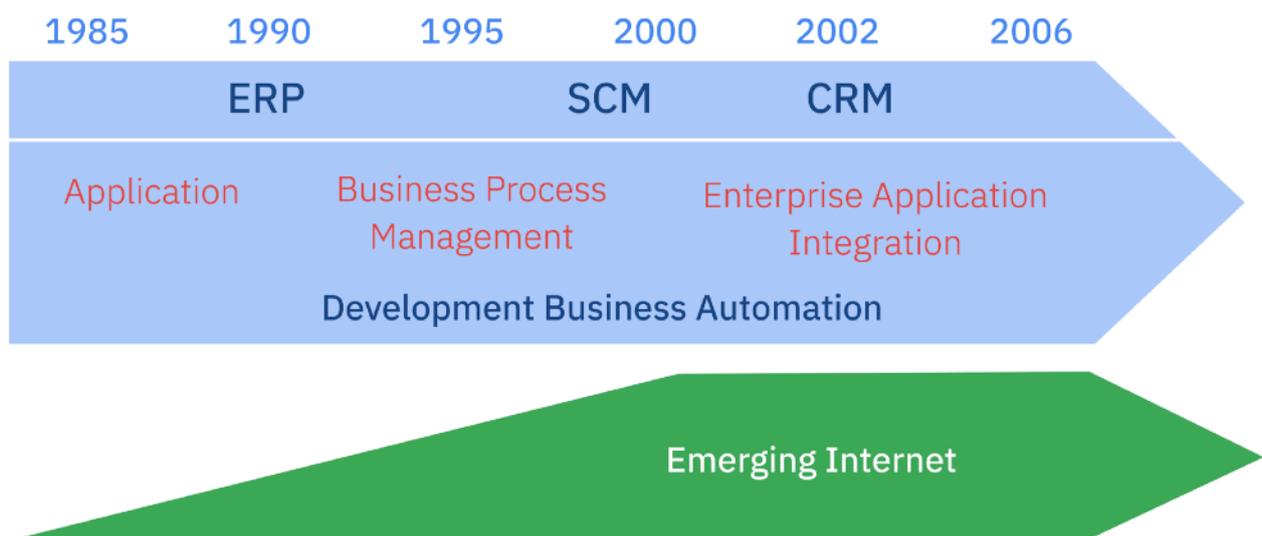
TopTier, one of the first portal companies, was unique because of its drag & drop technique. Anyone who saw this was immediately sold. This is the advantage with technology in the browser that is immediately available for the end-user, as in the plane, the first attention is focused on the cockpit. But there is also the machine room where eventually the basic work for the business processes still has to be performed. Shai was extremely good in the cockpit, and Theodoor's team, with their XML expertise, were the experts in the Service Oriented Architecture (SOA) environment for managing and integrating the business processes.

The revenue of TopTier at that time was US \$10 million, but the company also ended up with a loss of US \$10 million. At the crest of the internet wave in 2000, we were preparing TopTier for an IPO. Credit Suisse First Boston valued the company at a billion dollars, even though barely any revenue had been generated. Unfortunately, this was just before the internet bubble burst, and we were two days too late with our public offering.

The demonstration for SAP was a breeze. Shai, with his charisma, convinced Hasso and his team. A few months later, we sold TopTier to SAP for US \$400 million, and the company served as the foundation for the development of SAP NetWeaver. In an unusual but significant move, Shai Agassi, the founder of TopTier, was offered responsibility for all SAP development worldwide.

Shai was always a reliable person for me. Together we always had the habit that our yes-word was enough to allow us to act quickly. During the execution afterward, the circumstances sometimes turned out to have changed drastically. Still, we always managed to come out of this with mutual respect in a win-win situation. Reciprocally he often showed that he saw Hasso and me as his most important mentors.

The sale of TopTier was a good opportunity to use the experiences of our first product with Baan Open-World, with a portal and XML links to ERP systems. To start from scratch again. We had learned that what we had built was certainly not scalable. An ESB had to function as a scalable grid, in which the status in the XML object had to be regulated.



Enterprise software and the Internet technologies are developed in completely separate processes and became difficult to bring together

Why NetWeaver went wrong

How could things go wrong with NetWeaver for years now? I fear that Hasso let himself be wrapped up by the charisma of Shai and did not realize any architectural support within his team of a complex service oriented architecture. As mentioned in the book by Mirchandani this was not easy. We, as Cordys, had left legacy Baan products with the millions of source

rules in Baan-4GL and switched to a Business Operating System where the improvement of the processes was realized centrally from a composer in Java.

The service oriented architecture initiative has been stuck in SAP's old Advanced Business Application Programming (ABAP) environment with NetWeaver's years of lamentation. It was not until 2007 that NetWeaver was retired by purchasing Business Objects, an acquisition of several billion dollars. But this concerns purchasing more than ten-year-old products, which can hardly be integrated with their original basic products. Here we see the core of the current complexity of the legacy ERP vendors.¹

We have many similarities in terms of vision with SAP in this ERP journey, although we have not done this within the same basic company. I have experienced that these disruptive innovations can only be realized by repeatedly cutting off the old and leaving the old ships behind. You do not have to burn them anymore, but it's better to turn them into cash to invest in a new technology wave again.

¹ For those more interested in this subject, I recommend reading 'SAP Nation 2.0', by Vinni Marchandani, in which I see many similarities with the challenges and events related to ERP software development, that are discussed here in my autobiography.

3. The traditional ERP implementation journey

At the end of the last century, it seemed that Business Process Reengineering (BPR) would really succeed. The strategy consultants in the boardroom were able to convince the executives of the enormous benefits that could be realized if we could better control the processes 'end-to-end.' At last, it was all about what Michael Porter had come up with operational excellence. And indeed, theoretically, there was much to be gained, such as improving lead times through a lean approach, lowering stocks, and managing the outbound processes in the supply chain. This brought high costs for the strategy consultants but no problem because there was much to earn. And yes, after nine months, the blueprint for the to-be situation was ready. The System Integrators (SIs) come on board because the strategy consultants do not know anything about the IT translation. Aligning IT & Business was then unthinkable. Scarce architects were called in to translate the BPR models into a Request for Proposal (RFP).

The complexity we create by changing vanilla

In that process, we take an ERP package, the most complex system for back-end logistics solutions, as a starting point. After about six months, the criteria for selecting the right ERP package would be ready. The system integrators had every interest in a dominant role in the RFP process because most of the work comes after the selection. In the selection phase, everyone avoids as many uncertainties as possible. Questions such as: how many installations and industry experiences were much more important than talking about disruptive innovation.

The purchase price of the software is obviously not that important because it's only 10% of the total cost of ownership. Experiences of the SIs with the large legacy suppliers play an important role. So, in the selection, we usually end up at SAP in Walldorf. The order was placed, and the perpetual licenses for use for years were paid equally. The maintenance contract was also concluded, and as a result, the supplier has already secured its guarantee for the revenue (with an extremely high profit) for the coming years. After purchasing the ERP licenses, the work could finally start. But that was a bit disappointing. Translating 120,000 complex parameters to the 'to be' situation in the new BPR model was extremely difficult. The data of the logic was stored in some 80,000 database tables. After nine months, there was ultimately some insight, but it turned out that a lot of customization had to be done to complete the requirements and wishes.

Now the work for the SIs began. Only they had experience with the traditional programming in the already outdated 4GL programming language. In the meantime, the supplier came with a new version, which was not of any help because the previous generic

version had now been transformed into a unique project version. The SIs are then still going on for about two to three years before we think we can achieve the ultimate to-be situation. And everything we do is guaranteed to be ‘handmade,’ but it is worth around € 1,000 a day, unlike our colleague the craftsman in Zimbabwe who follows the same development process in creating a product, but for only US \$2 a day.

The Speer project providing all the logistic processes at the Dutch Ministry of Defense is a champion wasting more than one billion euros, with hardly any result. According to the Court of Audit, this is more than double compared to the liberalized € 481 million of the ministry. The Ministry of Defense must make much more progress instead of waiting much longer for the new system's benefits to be exploited.

The Ministry of Defense has always justified the high costs for Speer so far because, with its introduction, large savings could be made. It looked so promising, those complex ERP systems. It looked like a beautiful castle from the seventeenth century, where everything shone as beautifully harmoniously. Similarities in terms of complexity, but the difference with ERP is that the lifespan is completely different. Instead of centuries, we are talking about years. The building blocks for ERP with its algorithms had their origins in the 1980s when Oliver Wight ² turned the old MRP concepts into MRP-II. Software vendors have made good use of these algorithms. Especially the availability of relational databases made it possible in the eighties to manage complex data files reliably.

Later we got the expansion of the query languages, which made it much easier to combine information from the different fields within the untold large package. The innovative possibilities of the 4GL languages (instead of the earlier 3GL languages such as COBOL) resulted in improved programming productivity. Moreover, the functions in this package for the production industry could be built with graduates and especially mechanical engineers who understood the underlying business functions of the software much better.

These systems had attractive vendor lock-in for their providers as protection. Moreover, they were also database dependent in the early nineties. Baan was the first ERP supplier to develop a database-independent version with Triton at the end of the 1980s. Then in the mid-nineties, we got the powerful database handling with event-driven 4GL, our Baan-IV product, but most ERP players have not been able to realize this because of the complexity of the legacy systems.

² Early in Oliver Wight's career, he recognized what separated well-managed companies from those out of control. Closing this gap between outstanding versus underperforming companies became Ollie's crusade. He formed the Oliver Wight company in 1969. The company's single-minded mission was "To help executives manage their business more professionally." Over the years, they led the evolution of MRP into MRP II and expanded production planning into sales & operations planning. From strategy to tactics, these processes integrate sales, marketing, finance, manufacturing, engineering, distribution, purchasing, suppliers, and customers. Ollie died in 1983 at the age of 53. Through his courses, presentations, articles, books, and video courses, he educated and inspired thousands of executives.

Gartner identified this problem as far back as 2001. It is technically possible to build a real-time continuous planning system but breaking through the process barrier will be extremely difficult. ERP systems will continue to be data-driven. Although planning frequency has typically increased from weekly to daily (thanks in part to the technological development from MRP to MRP-II, a type of 'on-demand planning'), this is often hard to set in operation with ERP implementations. It was also hard to scale these planning systems to the rest of the enterprise and those of the enterprise partners — so that the whole supply chain moves in lockstep. To achieve the real-time continuous planning system, processes should be centralized and not cast in concrete data-driven business logic systems.

Hence, it is clear that ERP systems cannot solve the problems that Porter identified. While ERP systems may help lower IT and administrative integration costs within a business unit, they cannot improve the value proposition or give the company a unique competitive edge. As a result of this, we saw new types of enterprise software coming up: Supply Chain Management (SCM), Customer Relationship Management (CRM), or Product Lifecycle Management (PLM) — all focused on specific business domains. And around the same time, The internet started to develop with its completely unstructured way of storing and accessing information.

Billions invested in acronyms — without ROI

The market has invested billions in software applications at the end of the last century. These applications are known by various names such as ERP, CRM, SCM, PLM, etc. Companies in the IT industry had to keep dreaming up new three-letter abbreviations to differentiate themselves from the competition. Clients were often bewildered by these terms. They purchased these applications because they thought that if they did not, their company would not be able to stay ahead of the competition. However, the expected return on investment was often not achieved by a long shot. As a result, companies were faced with a situation where they had not yet recouped all their billions in investment. And this came at a time when the market required faster changes, and IT departments were under tremendous pressure to finally make these investments profitable.

Industrial companies handle complexity better than IT companies

What could be the cause that the larger IT projects so often failed in recent years and that the costs, in most cases, get so completely out of hand? First of all, we must realize that there is still a continuation of the old legacy systems that have their origins in the last century. With the introduction of IT projects, hardly any use is made of the latest generation of powerful tools that are so much simpler to use due to the influence of 'consumerization.'

First, let me describe how these old legacy systems are so much more complex than the new generation of applications. Take a look at the way professional hardware companies build their products. If you compare the first Apple computer, the Lisa from 1983 with a 5 MHz processor, with the 40 MHz Mac computer from 1996, you are talking about enormous performance differences. But if you compare this Mac from 1996 with the iPhone 8, from 2017, with 2 GB RAM, you can imagine the developments of the current generation apps.



The key to innovations in products lies in the disconnection of the components. Some components last longer (think keyboard) while other parts are replaced much faster. But with the iPhone 8 you will no longer encounter components from the last century. At the same time, the same old business functions such as word processing and mail are still supported but now also offer the opportunity to add innovative social processes. In the business functions of the backend applications, we hardly see any difference over the past 25 years. Baan Company had built its first MRP package in 1983. The 3rd generation development tools were still very simple at the time, although we already used an RDBMS. In 1989 we started from scratch again with TRITON, our MRP-II package, but now with 4GL tools. In the early nineties, we once again destroyed our old source code. We started from scratch again for the third time to convert all our experiences from the past years, but now using the latest generation of event-driven 4GL tools into a totally new product. This ERP package, Baan-IV, was successfully launched in 1996.

Our experiences at Boeing were crucial here. However, since this time, the basic functionality is still retained by Infor. For this M&A-driven company, it seemed too complicated to distance oneself from this legacy because the maintenance drives the business model. Therefore, executives no longer dared to build a complete ERP system from scratch again with the newest generation of tools. This also applies to Oracle and SAP, where much older source code from the last century is still present.

Dependency on software suppliers

The consequence of all these IT investments is that companies have become very dependent on their software suppliers. In other words, they have no more leeway. For upgrades, they have to wait until the supplier comes up with a new software version, which can usually take years. Once the new version is finally released, it often requires a complicated migration project.

The hidden costs of customization

- Customizing your ERP system is time consuming, skilled and requires specialist technical know-how
- Quite often the business has to work like the ERP system **dictates**
- Ideally you want your business to run how the business managers want it to run – **regardless of your IT**
- Many changes that business managers want to make **do not impact ERP** but have to work to ERP timescales
- Ideally the business needs to do what they require, **leaving IT in control**



Moreover, the project has cost several million dollars, frequently making companies adapt the acquired standard software to their requirements. You then end up with a sort of mélange of standard and customized software, putting companies progressively into a situation where they have no room for maneuver. Speed of change and fast innovation becomes almost impossible. How often have your operational changes and business improvements been delayed because of complex and expensive IT projects?

No BPM match with ERP-vanilla solutions

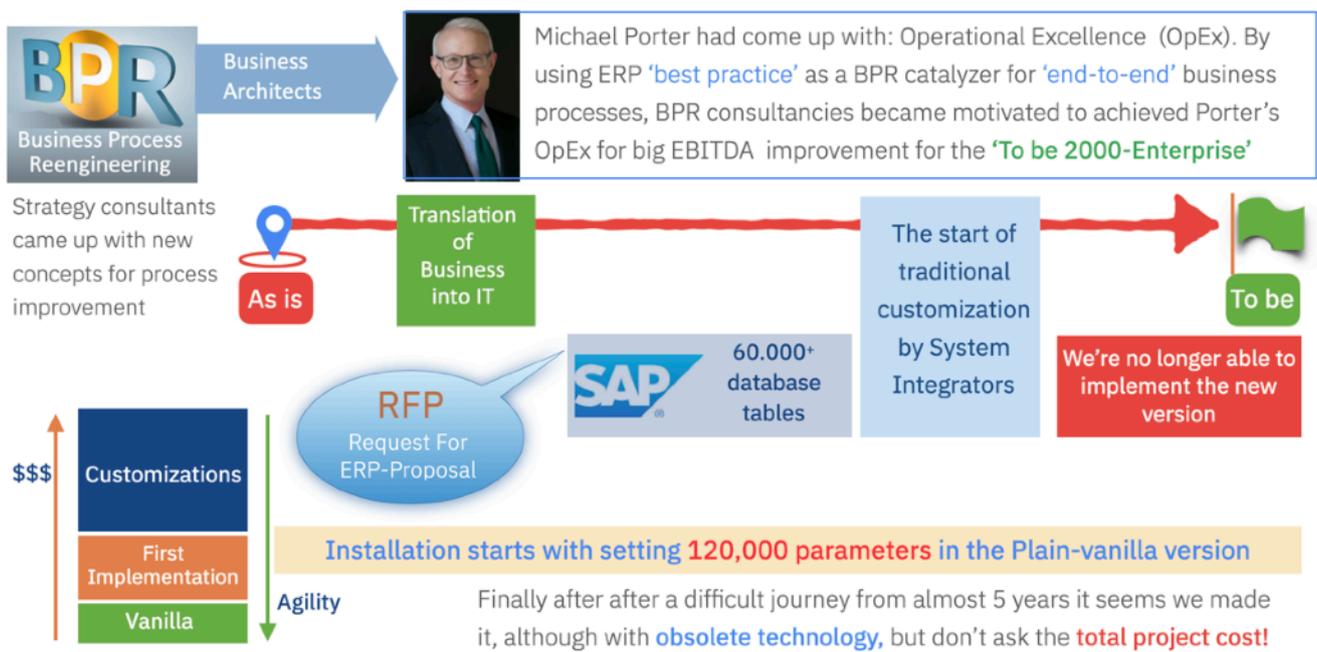
In the middle to the late 1990s, there was an emergence of business process reengineering enthusiasts who understood what Porter meant. The big picture they sought to convey was that companies needed to start defining their strategic goals and business models and create their value chains. Their theories became increasingly popular as this was expected to help companies to:

- create a competitive edge: having mapped out processes were supposed to help companies to identify gaps and define processes; and,
- increasing profits: the lead time within the supply chain could be improved significantly with end-to-end business processes that do not stand still.

However, the expected benefits of BPR did not materialize. This is largely due to the cascading series of issues in the implementation phases of the ideal 'BPR-to-be' scenario:

- Firstly, mapping the 'to-be' scenario with the available ERP systems usually proves to be a problem that is not thought through.
- Companies cannot map the available best-practice solution to the BPR objective. It usually also takes several months before the customizations in the vanilla ERP systems are realized.
- Meanwhile, the industry experiences new technology advancements each day that the company cannot leverage because of their prior technology lock-in.
- Inevitably, back-end systems prove to be legacy bottlenecks that will cost increasingly more and more time and money to maintain. To enable these legacy systems to meet the new BPR ideals, companies will add increasing spaghetti code to their system infrastructure, compounding the technical complexity.

The traditional ERP implementation journey



Technology dictates the business

The world has turned upside down. Companies place prime importance no longer on their business model and business processes but on the functionality of their software. Companies can no longer adapt their business processes to changed circumstances because the information systems are rigid. Even if it is possible to adapt them, this might take years, whereas changed market conditions or new customer demands might require a response in a matter of months, weeks, days, or even hours. Companies have become completely dependent on their IT departments.

Leave your ERP to do what it is good at



- No doubt, ERP does what it does very well
- But it **isn't the place** to innovate to differentiate your business
- Your business has **processes** that span many business units, systems, countries and data
- As you need to evolve, you need to make that change happen **quickly**
- ERP isn't the place for this, something else is....

Solving these problems was our mission at Cordys already when we founded the company. With our many years of experience, we developed a completely new approach for companies to maintain and improve their IT applications.

Michael Porter's 'competitive advantage'

Or ERP for run-of-the-mill companies? In May 2009, I came across a good article on the subject by BPM analyst Paul Harmon: Michael Porter argues 'competitive advantage' refers to a situation in which one company manages to dominate an industry for a sustained period. An obvious example in our time is Walmart, a company that completely dominates retail sales in the US and seems likely to continue to do so for the foreseeable future.

Achieving a competitive advantage should be the goal of every leading company. Having defined the goal, Porter next considers how a company might gain a competitive advantage. In other words, he asks how we can distinguish between the losers, the winners, and those rare winners that achieve real dominance. 'Ultimately,' Porter concludes, 'all differences between companies in cost or price derive from the hundreds of activities required to create, produce, sell, and deliver their products or services, such as calling on customers, assembling final products, and training employees.'

In other words, 'activities are the basic units of competitive advantage.' This conclusion is closely related to Porter's analysis of a value chain. A value chain consists of all the activities necessary to produce and sell a product or service. Today, we would probably use the word 'processes' rather than 'activity,' but the point remains the same. Companies succeed because they understand what their customers will buy and generate the product or service their customers want.

So far, the conclusion seems rather obvious, but Porter goes further. He suggests that companies rely on one or two approaches when they seek to organize and improve their activities or processes. They either rely on an approach which Porter terms 'operational effectiveness' or they rely on 'strategic positioning.'

Operational effectiveness

Porter defines operational effectiveness as 'performing similar activities better than rivals perform them.' In essence, this is the 'best practices' approach we hear so much about. Every company looks about, determines what appears to be the best way of accomplishing a given task, and then seeks to implement that process in their organization. Unfortunately, according to Porter, this is not an effective strategy. The problem is that everyone else is also trying to implement the same best practices.

Ultimately, best practices do not give a company a competitive edge. That's why they are too easy to copy. Everyone who has observed companies investing in software systems that do not improve productivity or price but just maintain parity with one's competitors do this. Worse, this approach drives profits down because more and more money is consumed in an effort to copy the best practices of competitors. Suppose every company is relying on the same processes. In that case, no individual company is in a position to offer customers that special something (incremental value) for which they can charge a premium. As Porter summarizes: 'Few companies have competed successfully based on operational effectiveness over an extended period and staying ahead of rivals gets harder every day.'

Michael Porter's operational effectiveness

- Vision disturbed by **legacy silo's**
- No **'end-to-end processes'**
- Not **'one version of the truth'**
- Data with **AI/ML** not available for business decisions
- No **Digital Industry 4.0 Enterprise** with **dynamic workflow** processes but to deal with PDF documents and spreadsheets
- The companies activities **converge** over time

Baan Company's ERP
improving to integrate with
Cordys business operating platform

ERP
BPM
BUSINESS PROCESS

Strategic positioning

The alternative is to focus on evolving a unique strategic position and then tailoring the company's value chain to execute that unique strategy.

'Strategic positioning,' Porter explains, 'means performing different activities from rivals' or performing similar activities in different ways.' He says that 'while operational effectiveness is about achieving excellence in individual activities or functions, strategy is about combining activities.'

Indeed, Porter affirms that those who take strategy seriously need effective discipline because they have to reject all kinds of options to stay focused on their strategy. Rounding out his argument, Porter concludes, 'competitive advantage grows out of the entire system of activities. The fit among activities substantially reduces cost or increases differentiation. He warns that 'achieving fit' is difficult because it requires integrating decisions and actions across many independent subunits.'

Porter's argument makes a strong case for the merits of defining a goal and then shaping and integrating a value chain to assure that all the processes in the value chain work together to achieve the goal.

The importance of this approach, according to Porter, is derived from the fact that positions built on systems of activities are far more sustainable than those built on individual activities. In other words, while rivals can usually see when you have improved a specific activity and duplicate it, they will have a much harder time implementing and integrating it. They will have an even harder time duplicating the management discipline required to keep the whole integrated and functioning smoothly. How does this all relate to ERP systems? Let's take a closer look.

In 1998 the structure was well-developed after 20 years of experience. The Baan tools as a development environment formed the basis for the common architecture (CAA - Common Architecture Standards). Additional technology such as Dynamic Enterprise Modeling (DEM) made it possible to call the software from the business processes. The intention was to arrange the workflow processing. In the layer on top (shared services), dependencies such as translation and version management were performed at a central location, disconnected from the technology. In the outer segment, the applications were stored as components.

This made it possible that in addition to the own product (Baan-ERP), the purchased products (CRM and SCM) would also use the underlying components. To the market, there was one business unit. Unfortunately, this component design was never fully implemented while going to market as one business unit was not consistently

continued. Baan's approach to calling the software with business models from the business processes was unique in the industry.

This was the most important way to control the implementation costs. Business models could be stored in the Baan library. ERP software was often purchased at that time to redesign and improve business processes, to achieve Business Process Re-engineering (BPR).

We have recently seen increasing criticism of the complexity of legacy ERP applications. It is no surprise that the foundation of ERP development stems back to the seventies. After all, these systems were based on the assumption that a relational database could cover 'the whole world,' which is a rather obsolete vision in this day and age.

When these systems were being developed, we had not even heard of the internet, let alone web 2.0 developments. Leading analysts, such as Bruce Richardson, who was with AMR Research, were concerned about the vision of leading ERP vendors concerning the use of software as a service (SaaS) and provisioning in the Cloud.

Criticism of ERP systems

'Executives from one of the best-known ERP vendors recently talked to us about their 2009 product plans and strategy. At the end of the call, I expressed my astonishment that there were no plans to offer any part of their company's product line as software as a service (SaaS) [in the cloud].'

'As they talked, I was transported back to the early 1980s, where I found myself in a room filled with mainframe and minicomputer vendors. They were screaming about the need to kill off internal PC development initiatives because these lower-cost, limited-function desktop boxes would cannibalize sales of higher-margin systems.

While it didn't exactly play out that way, the hardware landscape was changed forever. IBM reinvented the mainframe as a giant server. PCs spread like kudzu, obliterating dumb terminals and small business computers. The only remaining minis are in computer museums.'

'Is the same about to happen to the enterprise applications market? Are the largest ERP vendors becoming the new mainframes by holding on to the traditional deployment model? Looking out five years, which applications will run on-premises versus on-demand or in the cloud?'



Bruce Richardson, former Chief Research Officer AMR Research

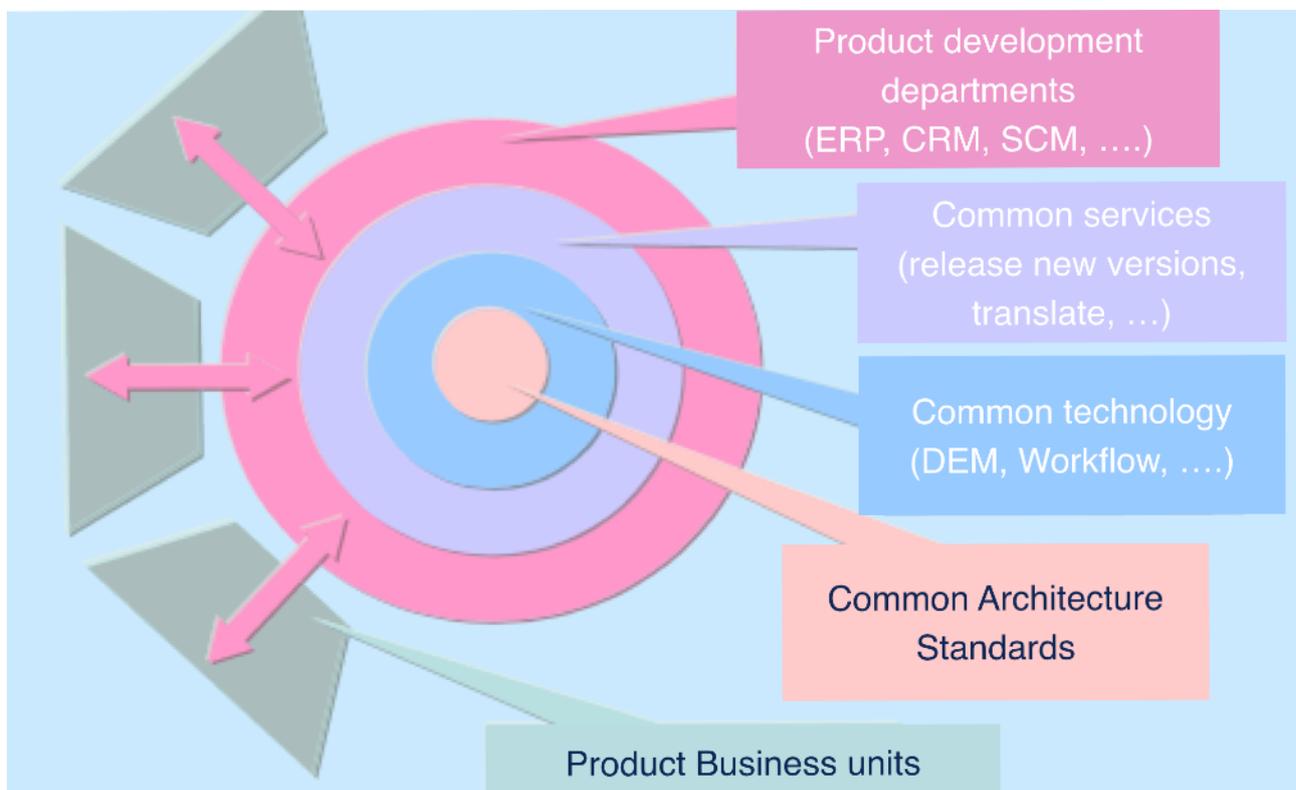
Customizations increases ERP's complexity

It isn't just that these systems are getting increasingly complex to develop in a team of thousands of developers, but also that the user cannot even use them as a vanilla solution. The main problem lies in the customer-facing applications. These applications often cost several times the purchase price of the licenses.

There are many examples. Such as a major corporation in the chemicals industry, which has managed to reduce its IT budget down to less than one billion dollars a year. However, it seems that over eighty percent of this amount is needed just to keep the lights on in the IT department. In addition, there is hardly any room for process innovations.

The so-called 'successful' ERP installations across all of the company's offices cost at least one billion dollars. Not all of this money went to licenses — not by a long shot. They probably did not pay much more than one hundred million dollars for the licenses; the remaining amount probably paid for customizations, system integrators, and the company's own IT department. And after all that, the possibility of upgrading to a new version of their ERP system seems to be virtually impossible.

The conclusion is that standardizing on one ERP vendor might make the IT department more efficient. Still, it does not provide the required business benefits such as faster time to market of new products or one view of the business.



Organizational philosophy of IT production components by end of the nineties

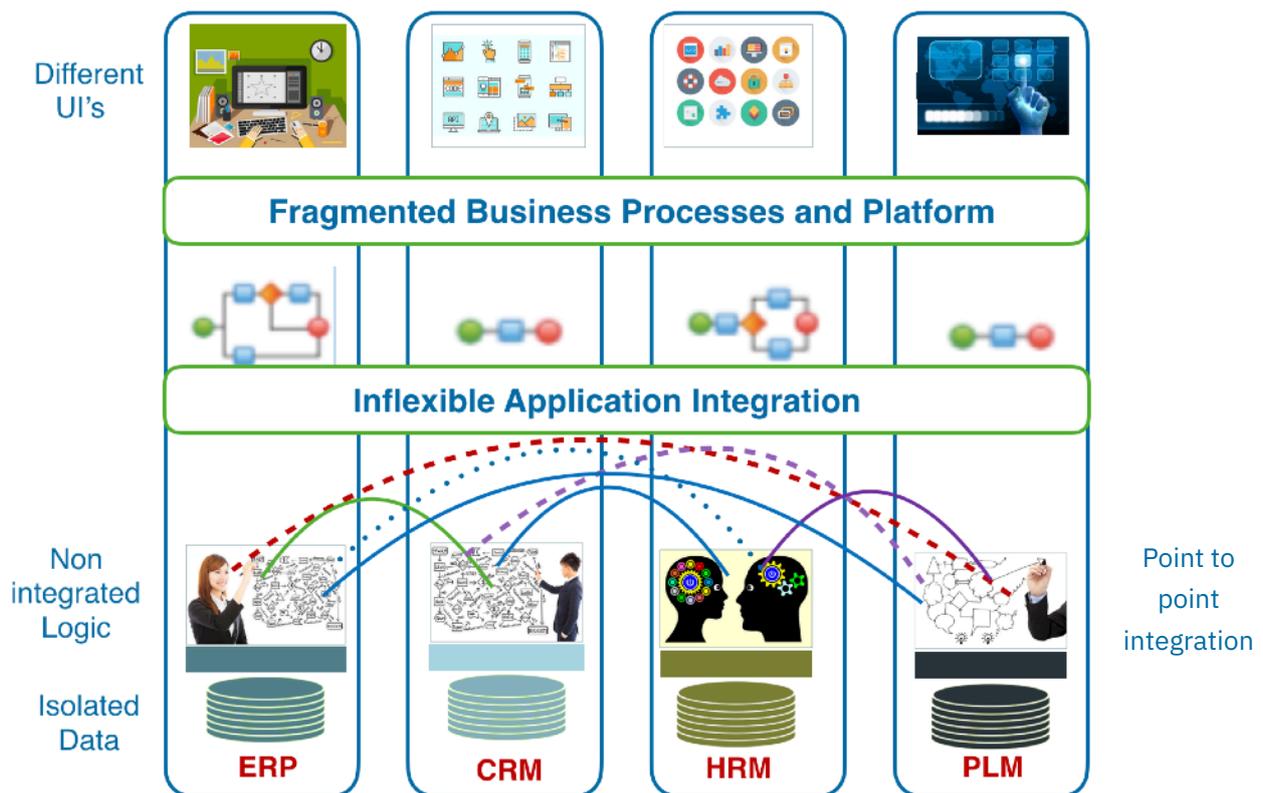
We found the same situation at a multinational electronics company. Despite starting with the same ERP version, every division now has its own distinct implementation because of the customizations. And these divisions are barely able to communicate with each other using this software. The 'one ERP' ideal is still quite difficult to reach. Doing business with retail conglomerates is painfully complicated. It is extremely difficult to map products from the various divisions into 'one view' in retail corporations. However, the divisional systems are much better arranged than that of the corporation, which is the underlying success factor in the supply chain, after all.

One would almost start to believe that ERP stands for Enterprise Resource Problems! A total system for the consolidated enterprise does not appear to be feasible, let alone a solution for the entire supply chain. This is because processes have been cast in the mold of the program logic, in a manner of speaking, and are no longer accessible from outside the silo. Most integration is done within the vertical silo, yet horizontal decoupling layers that provide integration and connection between the silos are missing.

Complex, data-driven ERP systems will continue to prove useful over the coming years due to their 'best practice' status, provided they can shake off their customizations in the future. These customizations can be built easily into the horizontal business process management layer with similar or better functionality. But in this composition layer, business processes are still based on structured data, which means implementing a competitive advantage in line with Michael Porter's vision, continues to be a difficult challenge. However, when we add collaboration and cloud orchestration to the existing composition layer, we bring incremental value in making it possible for any web service to be retrieved from the internet at any time and make it part of a business process. Here we talk about the easy configuration of situational applications, which can be built into powerful tools for the knowledge worker within a few hours. This decoupling of frequent customer, business, or market requirements from the underlying systems is exactly what is needed to outperform the competition.

All silo systems used within a company have their own individual logic. The software that translates this logic into applications is usually very old and is often built with traditional 4GL tools from the last century. Each silo application also has its own database. So, the problem is that all these components in these silos each time and in different ways duplicate the final 'end-to-end' processes. BPM now offers the possibility to integrate this logic (preferably without customizations) into a parent business process management layer and now enriches it as a cloud system. From this moment on, it is necessary to adjust these legacy systems with customization no longer and preferably reduce them step by step to the original vanilla version. The customization should then be rebuilt centrally, but with the modern development tools of today. Legacy data should be synchronized in the

cloud. The user interface of each individual system should be controlled as much as possible, centrally, and also per user. Human interference in transactional processes (case management) should be dealt with, and all the above data should be accessed from the cloud and approached via mobile devices. This approach gets the old legacy under control, so they can still go along without the need to pay the expensive maintenance contracts. Outdated components should be replaced with mobile apps. We call this: ‘sunset of legacy systems.’

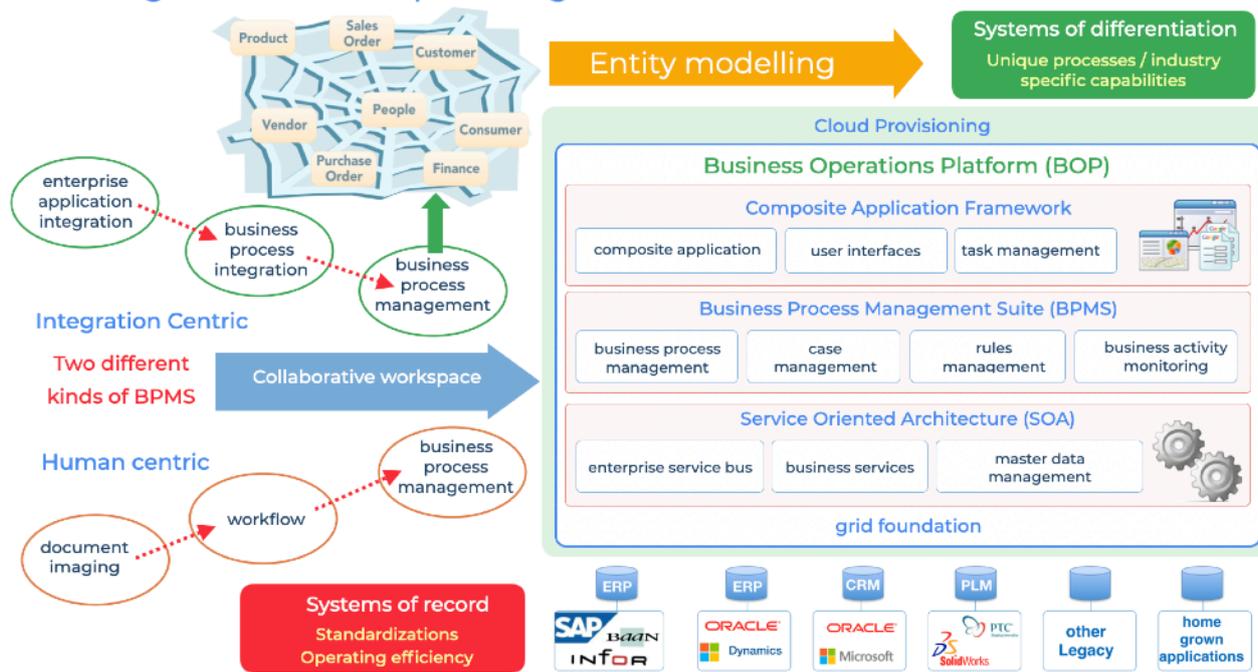


The Vertical Silo approach results in inflexible integration, fragmented processes, and disparate User Interfaces.

Decoupling and loose coupling

Loose coupling or decoupling enabled the industry to hide the complexity of its products under the hood. Everything was built ‘handmade’ into an ever-expanding spaghetti structure. This problem is most salient in customizations. Any discipline that the professional Independent Software Vendor (ISV) still had in building generic applications soon vanished as customizations began. It becomes nearly impossible to migrate to newer versions from the vendor due to the custom changes getting in the way of the upgrades. In the second half of the 1990s, the need in business logistics evolved from phase 3 (ERP systems that focus on external integration in chain logistics) to phase 4 (Supply Chain oriented ERP). That was a nice description of analysts, but in practice, ERP was still limited to an inbound system within one company. And then, we are not even talking about the

Building a Business Operating Platform in the Cloud

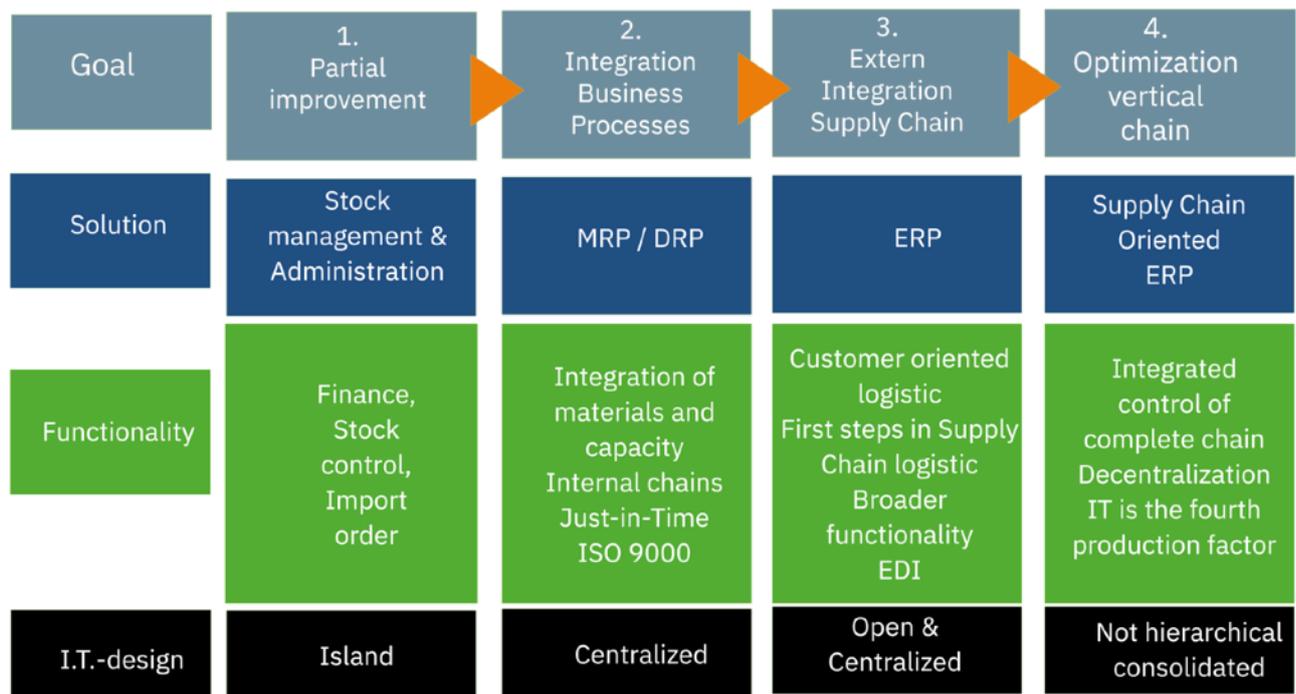


many different ERP packages that were operational in a larger group, let alone the many non-integrated silos with adjacent ERP functionality such as CRM, PLM, etcetera.

Baan Company responded by broadening its product range from ERP to beyond-ERP, i.e., ERP in combination with software for supply chain management (SCM) and customer management (CRM). Only a single ERP supplier has succeeded in rebuilding his old legacy systems in a newer generation of tools. And a real ERP solution is never realized by one supplier, where all ERP functions are built with the same tools, and the logic is managed in one database. Do not confuse this with the Oracle solutions, where a mix of old systems is bundled together via their Fusion platform. We are still talking about the logic that has been built by various software suppliers and taken over by Oracle or Infor because of the attractive maintenance contracts. The drama is not limited to a good ERP basic version, but mainly in the enormous amount of customization added to these outdated versions over the years.

Gartner says that 90% of the IT budget is spent today to keep the situation in the air. There is hardly any money available for process improvements, let alone disruptive innovations of another business model like Uber. We, like Kodak, continue to do our business as we always have, until we discover that there is no more room for us in the chain. Most companies can barely escape from the prison of a centralized system (see phase 2 in the picture below)!

The complexity of the back-end silo systems has increased, while the functionality has hardly improved. There is hardly any integrated solution between the various silos. By far,



Logistical development in the IT Industry with her adoption problems

the most complex system within these silos is the ERP solution. Over the past few years, tens of thousands of database tables have been added to the system, while sometimes more than tens of thousands parameters have to be activated.

As mentioned above, the basis of these systems is laid down in the logic of the last century to manage the MRP a transactions. As a result, stocks were also kept up. It was attractive to process the financial transactions to keep the most important balance sheet items from this MRP system. Later on, MRP-II also provided insight into the work planning in progress. Lead times were then transparent. This gave a better and faster insight into the closing of the financial period. The tracked hourly accounting of employees and the machine occupancy gave a reasonable insight into the cost price calculation.

Because of the improper use of these complex ERP systems, dramatic disasters have arisen. ERP system are completely different and not suitable for use as a platform for a much more rule-driven government organization such as the Defense ministry. In addition, this complex, outdated platform was purchased to facilitate the military of tomorrow. The modern knowledge worker has no need for outdated transactional back-end systems but more for modern smart apps that communicate with the world of the internet of things and big data. It is unbelievable that more than 1 billion Euros has been wasted in this exercise, while it is precisely here where so much should have been cut from the budget in recent years.

4. New principles of software development

A fresh beginning (with BPM & cloud)

Some people may think that after leaving Baan Company, I sat around doing nothing for a long time, but that was not the case, especially not in the beginning. Behind the scenes, I put much of my energy into reorganizing Vanenburg Group, our investment vehicle. However, it is true that later on, I indeed eased off somewhat. I went cycling more often and sorted out my library, for example. I am a builder, so I have to be organized first if I want to start something new. As a result, I disappeared from the public eye; at least, I did not cooperate with any form of publicity.

Many who know me professionally and personally have asked me: why did you start the Cordys adventure? This question is not easy to answer. During my entrepreneurship of more than twenty-five years, I have experienced various technological changes, primarily through my collaboration with Theodoor van Donge, who fulfilled the position of Chief Technology Officer at Cordys. Between 1995-1998, we were faced with a unique technological challenge and that was the reason for me to start a new adventure with Cordys.

In 2001, I made a new start with Cordys as a Vanenburg Group subsidiary. Vanenburg Group is my investment company. The years after I left Baan Company in 1998, Vanenburg Group acted as a venture capitalist with a broad portfolio of companies, including WebEx and TopTier. A few dozen of the approximately 6,000 people who worked for Baan Company returned to me after 1998 and after the sale of Baan to Invensys in 2000. While this was the uncertain start-up period of Cordys, most of them came eagerly and of their own accord, which I have always regarded as a huge compliment.

It had become a reverse world. Companies could no longer adjust their processes to changed circumstances because the information systems had become rigid. If it was possible to adjust them, it often took years of effort. Companies had become entirely dependent on their own IT departments. This had to be reversed: business processes had to be central again, and software applications integrated. At Cordys, we were able to develop an entirely new approach to IT applications within companies.

The name Cordys is derived from the Latin word Cordis. Cordis means 'of the heart,' and 'dys' stood for 'do-it-yourself,' indicating that anyone could build apps with Cordys without coding knowledge. You could do it yourself!

Let's take a step back and see how this second wave of technology started.

The consequences for the business processes

Many IT and consulting companies want us to believe that change is the keyword in today's economy — that change is what makes our era different from any other period in history. But is that true? The world changed dramatically when man learned how to make fire. The discovery of the wheel had a tremendous impact, as did the industrial revolution. The world has always been changing and will continue to change because man is constantly looking for ways to work more efficiently, more easily, and more quickly.

Scientists are continuously looking for new medicines, technologies, and many other things. Change itself does not make our age different from earlier periods; it is about the speed of change and the unparalleled pace of adoption. Computers and software have contributed to the fast pace. Still, the web created a conducive need for rapid innovation and consumer-driven adoption of new technologies and functionalities.

The result is that today's business climate has become extremely competitive in almost every industry due to globalization and the influence of the web.

It is all about speed, from responding to higher customer expectations in the online channel, implementing legislative changes and new compliance rules, to responding to unforeseen economic circumstances. Even organizations with enterprise applications, internal business processes, content management, and financials perfectly in order can be surprised by new trends, fantastic opportunities, or unexpected situations.

The first internet revolution

A new medium was developed in the mid-1990s based on the previously developed HTML protocol. It was initially intended for use by collaborating scientists. Still, new applications developed at a staggering rate: the masses gained access to the internet, the 'browser' phenomenon came into existence, and the internet began to be seen as a world with unlimited possibilities. Every business plan that contained the word 'Internet' could count on interest from investors.

The internet bubble grew rapidly in size. Large companies suddenly became nervous. Microsoft nearly missed the internet boat and had to pull every trick out of the bag to keep pace with its competitors. There was much uncertainty in the land of ERP as well; the rise of portals seemed to be a growing threat to SAP, Oracle, and Baan. There was a feverish frenzy of activity surrounding thin clients, zero clients, and portal frameworks for ERP systems. Even the takeover of TopTier by SAP could also be seen in this light.

The first webshops achieved success, search engines came onto the scene, and the market was in a rapid transition until the bubble burst in 2000. Was that the end of the internet era? On the contrary, in my opinion, the crisis that took place was a healthy development. What remained were the serious companies with a vision: Amazon, Google, Yahoo, e-Bay, and others. But it was still unclear how ERP systems could take advantage of the fact that increasing numbers of business processes were shifting to the online medium.

The ultimate example was Michael Dell, who built an empire based on a completely new distribution model via the internet. He achieved this using software, such as Supply Chain Management (SCM) from i2, even though this contained essentially solutions patched together through customizations. Nevertheless, it was clear that the market had fundamentally changed — for good.

As if that wasn't enough — along came the second internet revolution

The second internet revolution, or more accurately 'evolution,' had already been underway for several years. Although less shocking than the first wave, the consequences were much greater. The behavior and especially the expectations of internet users have fundamentally changed. Rapid introduction and acceptance of innovations, smart devices, a continuously expanding pallet of web site functionalities, and unlimited access to information, products, and social networks rewarded modern consumers' behavior. They confirmed the consumer's feeling that the possibilities were unlimited. These developments resulted in a shift from innovation focused on the consumer to innovation that the consumer drives.

This second internet revolution (web 2.0) made it nearly impossible to build and innovate on a vision that went beyond one or two years. Real business innovation required a different approach, whereby a fast implementation with a shorter time-to-market resulted in a continuous improvement cycle. The old rule *'if it ain't broke, don't fix it'* was no longer applied. Whether you want to reduce IT costs or launch new products and optimize sales per customer while also shortening production cycles, you had to improve internal information flows. Moreover, this had to be flexible because it had to be done quickly if you wanted to make another change. After all, the next business change was already waiting around the corner.

The emerging web 3.0 or the 'semantic web' had caused a tectonic shift in the computing world. The situation was even more challenging for companies that saw the online channel as an important new part of their business strategy. To harness the enormous potential of the web, companies had to adapt extremely quickly to keep up with emerging internet trends and hypes.

This requires fast, consumer-oriented innovation that had a direct impact on core business processes. Outdated or proprietary technology, such as custom software, with an outdated IT infrastructure, made building business software very difficult at the time. The limitations of development tools made customization nearly impossible, as well as causing many delays in integrating these legacy systems with improved online business processes. This made it very complex and expensive.

Taking advantage of new online trends, the required time frame for change was reduced to just a matter of weeks, often days, or even hours. The solution was a 'business operations platform' that enabled rapid implementation, monitoring, and continuous improvement of business processes and real-time integration with the underlying IT systems and infrastructure. It had to comply with:

- simple to use
- Open-source tools that could keep up with the consumer-driven trend
- drastically shorten the time-to-market for new online initiatives while increasing revenues through the online channel

The Cordys platform had been developed specifically for this purpose. It was the system that would enable businesses to answer the extremely high demands of online consumers and stay ahead of the competition.

But what happened with ERP in the meantime?

What went wrong with ERP systems?

ERP takes longer, costs more and under-delivers value. Those were the lessons we learned. In February 2010: According to a Panorama study, fifty-seven percent of ERP implementations take longer than expected, and fifty-four percent of ERP implementations go over budget. Forty-one percent of companies surveyed fail to realize at least half of the business benefits they expected from their ERP systems, and twenty-two percent of implementations fail to deliver at least some measurable business benefits from their ERP solutions. In addition, forty percent realized major operational disruptions after implementation go-live, such as the inability to ship products or close the books.

News articles like these spread over the years. After my time with Baan Company, I have explained why I began my new start-up, under the Vanenburg Group umbrella in 1999, with different innovative projects with an experienced team of engineers, IT, and business professionals, which became the foundation for Cordys.

The rise of full-fledged ERP systems, such as those from Baan and SAP, played a great role in the economy's growth during the final two decades of the last century. ERP implementations brought an efficiency revolution to finance, logistics, manufacturing, and inventory management while saving costs. As an industry, we have much to be proud of — and I, for one, am still proud of the important contributions that Baan implementations

made at companies like Boeing, Philips, Flextronics, Solectron ABB, and Komatsu. So, what went wrong? Why are ERP systems now regarded with such animosity and suspicion? Why does the industry now believe that the benefits of ERP systems no longer justify the costs?

The internet as the carrier for ERP and workflow processes

At the end of the 1990s, it became clear that a new developing medium would fundamentally change the world: the internet. The internet took companies and individuals by storm. Much could be said about the influence of the internet. For me, the most important aspect was the speed:

- New products, services, and technologies can be introduced and distributed at a rate that we would previously have thought impossible.
- New companies such as Google and Salesforce.com had become dominant players in no time.
- Established companies, for example, in the retail trade, were confronted with new competitors. The internet added a completely new dimension to the sale of products.
- Online communities that emerged accelerated the development of open-source software.

The internet implied that companies had to be flexible to take advantage of new situations by constantly monitoring their processes and adapting them very quickly — everything ‘In a blink of an eye’ — This means:

- Reorganizations and changes in company structure and strategy occur in a fast, continuous cycle
- Company data security has become a major concern
- Measuring, analyzing, and changing are the elements of a continuous process that we also call ‘closed-loop process improvement’ or ‘continuous process improvement.’
- Efficiency and cost reduction remain important business drivers, but they have become part of a complex multitude of factors in a permanent state of change.

ERP packages implemented in the decades before did not appear to meet the new requirements for rapid change and innovation in any way. The experienced team that laid the foundation for Cordys recognized these developments and predicted the consequences for business software. Based on these insights, we had evaluated three possible options:

1. To adapt existing ERP products to the new situation. This possibility was quickly put aside. Adapting existing ERP software is expensive, time-consuming, and also very risky. Although this approach can work for large service providers, it does not make sense for the users. Unfortunately, this approach is still applied.
2. Building a new (internet-based) ERP package that is suitable for the new situation. This scenario has been seriously investigated. It was attractive to us because we knew very

well how an ERP package should be designed. However, this approach was not chosen because it would have taken too long, and users had to discard their existing business software solutions and start again. That would have become huge capital destruction. We were also not sure whether replacing a traditional ERP package would be suitable for the demands of the new era.

3. Building a platform that encapsulates all the good elements of the existing ERP behind the scenes while internet capabilities are being added as a 'front end.' Such a solution would reuse the structured business logic and the unstructured information to develop flexible business processes that can be continuously optimized and improved.

Reflecting, it was a very wise and positive decision to choose the third option, which ultimately led to the Cordys business operations platform. When the concepts of BPM and cloud computing technologies were still nascent, we took the pioneering steps of building a platform that leverages and combines both developments. And here's why that pioneering move promises a great benefit.

Through mergers and acquisitions (M&A), some enterprise software vendors seem to be stacking a variety of doghouses atop their pre-existing systems to build their skyscrapers. They obviously have a lot of legacy system code and a lot of maintenance revenue to protect.

Caveat enterprise software incumbents: BPM in the cloud needs an architecture of its own – its own paradigm, not a sequel to the doghouse paradigm.

The journey which has resulted in Cordys making use of this new paradigm started more than 40 years ago. It was before the internet and even before the micro-computer.

In their book 'Business Process Management: The Third Wave', Smith, and Fingar wrote that in the business world, one thousand dog houses were stacked on top of each other like a skyscraper. That was a great proposition for sellers of dog houses but not for future residents. Skyscrapers need their own architecture – their own paradigm, not a continuation of the doghouse paradigm. Some business software vendors built various dog houses on their existing systems to construct their skyscrapers through mergers and acquisitions. But enterprise software companies need to be aware that BPM needs its own architecture in the cloud - its own paradigm, not a sequel to the doghouse paradigm. The journey that led to a new start with Cordys uses this new paradigm.

The above picture shows the stacked dog houses in the middle building compared with the large ERP suppliers. They have always expanded their functionality through M&A deals. In the meantime, they have also discovered the internet and have defined a smart answer to this, namely, to put a false façade in front of their complex stronghold.

Different ways to manage the ERP landscape



Front-end internet solution from traditional ERP-Vendors

M&A Silo's from the largest ERP-vendors with only UI integrations

Cordys (PaaS) BPM enriched with open source micro services

This transparent façade seems to be a nice internet solution, but on further analysis, one finds that this is only arranged for the User Interface. So, things like multi-tenant are hard to find. The old logic is still hidden in the stacked dog houses of the many M&A legacy systems.

The building on the right is a good example of new solutions built in a PaaS platform. Think on Salesforce or Workday solutions. A real best-of-breed approach now. Possibly all the compact functionality of the legacy logic of the dog houses is not yet complete present here, but the elevator symbolizes that there is now a nice interface with the even more innovative SaaS open source microservices.

As a result, it is now possible to use the still missing complex logic from the highly outdated systems to build innovative apps on a PaaS platform. This is now really a disruptive approach. This avoids the vendor lock-in situation, and it is now possible to realize unique, distinctive components as a competitive edge solution. The complex backend is now managed as a secure engine in a PaaS platform.

Early bird in offshoring R&D

Cordys resulted from more than thirty years in business and several years of intensive experience with internet technology. The company represented a merger of various post-1999 internet technology-based IT initiatives. These initiatives were originally a part of a venture capital portfolio, consolidated into one company after the internet bubble

burst. Cordys officially went into business on October 1, 2001, although preparations began in 1999.

As a venture capital company, Vanenburg Group stimulated initiatives for innovation from startups in various ‘incubators.’ These were companies in their first phase of existence that still had to prove their right to exist. Our incubator program provided considerable amounts of investment money to these start-ups. A significant advantage of this approach is that Cordys was able to start developing IT products from scratch, not hindered by ‘legacy’ ballast from the past.

The structure and the mission were clear: Cordys improves business processes with the help of internet technology. It is allowing us to break away from the old technology cycle and begin a new cycle. We had the experience, the investment, and the belief that it is possible. And we proved it by making Cordys a mature company, with a strong product that many customers now use in various industries.

Cordys adopted the ‘old’ principles of the Baan-Web, using partners to accelerate growth. It was apparent that we were nowhere near powerful enough to take a stand on our own on a global level. If we wanted that, it would be better to sell up to a large multinational company. Nevertheless, we wanted to participate, and as such, we had to find partners, especially service partners.

The main strength of our platform lay in the fact that it generated many business opportunities and revenue for our partners. It was also one of the lessons we learned earlier: helping your partners generate revenue helps your product become successful.

Business Process Management

Recent advancements in Business Process Management Suites (BPMS) enabled us to make these process changes without changes to ERP systems. The business used a human-readable interface to visualize processes on screens and make early process adaptations, which could now reside in the BPM layer. In addition, the notion of ‘loosely coupled components’ allowed us to respect traditional legacy systems — while leveraging the logic of legacy systems as the transaction engine.

These new BPMS advancements were in sync with the insight that while corporate strategy may change once every one or two years, operations are likely to change every couple of months. Unfortunately, back-end systems and the multitude of tailor-made solutions had an average change cycle of about 6 to 10 years — hitherto unable to keep pace with business changes.

There was now a need for a distinct abstraction layer we called the ‘business operations platform between the backend and the business.’ This platform could operationally function directly from the moment of process modulation. It became possible to make changes in the business process layer just minutes before the actual transaction. This is what we had in mind when we started Cordys.

Integrating legacy systems with the cloud

Cloud computing is changing the IT landscape rapidly, but most organizations will never move their entire infrastructure to the cloud. Enterprise software systems will remain in the legacy on-premise environment. The challenge for these companies is to integrate their legacy systems with the agile and collaborative business services and applications available in the cloud and increase the speed of change and innovation.

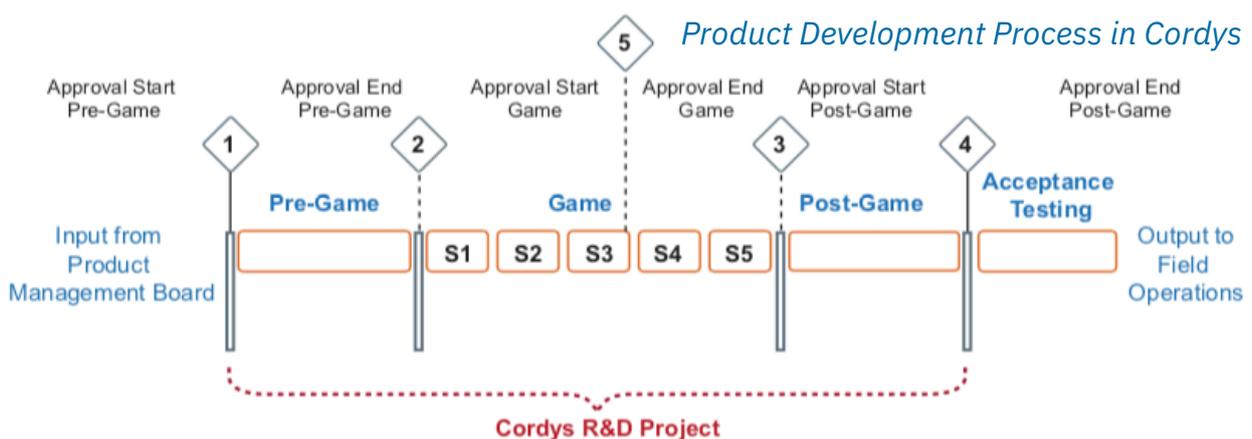
Process-centric cloud orchestration

The fast growth of cloud computing and the increasing availability of cloud services requires BPM platforms to orchestrate data and business process fragments out of the cloud together with heterogeneous systems and processes inside the enterprise. Cordys wants to lead in this process-centric cloud orchestration, and it is encouraging that Forrester recognizes the leading position of Cordys in this area.

Scrum – An agile development methodology

There are several agile development approaches, and Cordys chose the most mature and widely practiced approach called Scrum. Scrum is named after a rugby tradition where the participants ‘Scrum’ together to decide the tactics to be played out at periodic intervals. Similarly, the Scrum agile development approach centers on a daily ‘Scrum’ of a software development team.

The backbone of the Scrum approach has three distinct phases; product backlog generation (as described in the roadmap process above); the sprint backlog generation,



where a scrum team picks a part of the product backlog which they would target to complete in a given 'Sprint' period. A sprint typically varies from 2-4 weeks. The final stage is the shipment of a sprint where the product owner (usually a product manager) accepts and validates the delivery of that specific sprint. This approach minimizes deviation from the expected outcome, and software is iteratively developed to fit the market need perfectly.

A sprint is a unit in a sequence of events that make up a complex delivery within a specific product release. The release is composed of several stages, which usually have 6-8 sprints. This phase of the release is called the game phase. Every release has three stages: the pre-game phase, the game phase, and the post-game phase.

Horizontal groups and practices

Throughout the span of the software release cycle, different capabilities of the R&D team are engaged, ranging from product management, development teams, release management, architecture team, usability engineering, documentation team, suite validation team, and the tools team. Though the development team primarily produces the software, the role of the horizontal groups is very critical for professional software delivery. The horizontal groups play a crucial role in shaping code into professional software.

Suite validation

Horizontal groups that exist focus on validating the suite. This highlights the critical role they play in the quality assurance of the delivered software. The suite validation team was the final step of the Cordys software development process, which ensures the validity of the delivered software based on past and current market needs. A stringent set of tests is run covering various customer cases to ensure that the software aligns with all the quality and backward compatibility expectations. Cordys firmly believed in providing that the past value delivered to a customer is not disturbed, but rather the experience is enhanced by the delivery of a newer version of the product. It is their mandate to ensure the backward compatibility of a new release with respect to older versions of a product

Some startup initiatives are coming together

From 1995 onwards, we at Baan Company mainly focused on better managing the complexity of ERP systems. In the end, we felt like citizens of the database prison. Already in the eighties of the last century, with our 3-Tier architecture, we had a decoupling between the data elements with the logic and the user interface. Because of this, we were database independent and hardware-independent, but later also browser independent for the user interface.

Being independent of external components like hardware and databases was great. Still, our business logic stored in one ERP solution with tens of thousands of database tables became too complicated. With our Nucleus project, we could cut ERP functionality from one integrated system with a kind of ‘Lego blocks’ for data objects with UI objects and Business Objects. Our dynamic enterprise modeling concept could then ensure the modeling of better customer-specific applications. Unfortunately, this great concept was destroyed within Baan Company at the end of the 1990s because the focus shifted from R&D to M&A.

Through conversations with Microsoft's Steve Ballmer, their interest in a possible collaboration with Baan Company became clear. As such, a vision project was created in which their top architect Adam Bosworth and our CTO Theodoor van Donge came up with an innovative vision in which the basis for internet software was defined as an XML object model.

Old experience and new technology coming together

The approach was consciously technology-driven, as at the beginning of Baan. Meanwhile, a small exodus of Baan developers began, caused by the increasingly uncertain developments at Baan-Invensys and later the acquisition of Baan Company by SSA Global. Lots of highly experienced people came to us spontaneously. Our application development team Triffit focused on building small components or add-ons on top of BAAN-IV.

We began developing application concepts for web services together with a bunch of engineers from India. The application team's practical requirements were built directly into the subsequent version of the platform. We initially limited ourselves to solving the deficiencies and problems of BAAN-IV, which we saw as ‘low-hanging fruit.’ It was more about gaining experience than getting clients within Baan’s installed base at this stage. This was an outstanding test case for the platform.

Streamlining the R&D processes

Cordys, as it was in 2012, went through various organizational changes, which is logical when building a new company. In the beginning, we distinguished two activities, Cordys and Triffit. It was similar to the situation at Baan in the 1990s: a team for developing tools & technology (Cordys) and another team for building applications (Triffit).

We deliberately allowed both teams to do their own thing. Friction may have been apparent now and then, with each team going its own direction, but I was not yet ready to put all my eggs in one basket. There was a certain duality between the two teams, which in reality is healthy in the incubator phase. I was convinced that one cannot achieve his aim in one fell swoop. In that period, we began to develop small add-ons for the existing Baan-IV product,

2020: Industry 4.0	IaaS	Hybrid Cloud	Edge Computing	Low Code	Zero Code	Machine learning	Big Data	Internet Of Things
2006: Collaborative Workspace	Alignment Business & IT	Case Management	Customers	Suppliers	Partners	Employees		
2003: Business Process Studio	Operational Excellence	Real-Time Business Platform	Business Processes	Modeling for BP Execution	More XML-based standards			
2001: Web Services	Cloud	Enterprise Collaboration	Portals	ERP	Web Services	SOA	Master Data Management	
1999: Enterprise Service Bus	Business Applications							
1992: SQL-Engine	Computer	Data Base Independent						
1984: the Baan Shell	Operating Systems	Converter to change the event driven 4GL into the C - language	O. S. independent	Transaction driven Logic				
1982: Virtual Machine	Hardware Independent							

Long R&D history via IT Abstraction Levels to become Platform Agnostic

which had a huge installed base. We had excellent contacts with the various user groups, solved several problems in the Baan software, and provided access to them via the internet. Generating revenue was not our main objective but testing our platform and learning real- world lessons was.

Step by step, it became apparent that the time was ripe for a merger between Cordys and Triffit. There was increasing friction between the two camps, particularly in the software factory in India. Although the branding of the two was linked to the Vanenburg Group, they acted more like two separate companies. There came a time when we forced a breakthrough and brought everything under one umbrella. To keep it simple, everything was combined into one single entity and continued as Cordys. Vanenburg Group served as the holding company.

In addition to our investments in companies such as WebEx and TopTier, we set up two initiatives to create a new generation of software. This was based on our experience at Baan Company when we created a tools department ourselves to produce applications. Our startup, Cordys, with 100 experienced engineers led by Theodoor van Donge built the tools. And our other start-up, Triffit, with 250 employees, led by Agalya Kitherian, was prepared to create a new generation of apps on top of an ERP system. Gradually it turned out that building a SOA BPM platform was much more complex than we initially thought. As a result, we merged the above startups into one company, and Triffit became part of Cordys.

In retrospect, this was not a wise move. Cordys could have been limited to building fewer new ERP apps within a PaaS platform as we first intended. We could have omitted the integration layer with legacy systems. But of course, hindsight is always 20/20.

From this moment on, the organization became more professional, and playtime was over. As our concepts were new, channeling strength properly at each stage of development once again proved important. On the one hand, I put all my energy into constantly motivating the employees, particularly in India. On the other hand, we were faced with the enormous challenge of achieving a breakthrough in the software area. Compared to others, this was a bit unique, as most other companies just outsourced work to India instead of involving them in key development processes and decision making.

Software factory in India

The experience of setting up a software factory in India over the past twenty years helped us to implement the new principles of software development: Scrum, among others — a new concept of agile development. This concept is based on industrial modernization, mainly derived from the automotive industry, where it is called ‘lean manufacturing.’ The values of Scrum are trust, commitment, focus, openness, respect, and courage. Essentially, there is an alignment with the former Baan Company’s three I’s: Innovation, Initiative, and Integrity.

Disruptive innovation

We have seen the regular innovations of the Baan software. The three different packages in the mid-eighties were built with the 3GL software. The breakthrough to 4GL made it



Collaborative Platform Development

- Focus on technology to support integration and collaboration
- Privately funded
- 100+ employees
- Close relationship with WebEx
- Lead architects of Baan Tools
- Offices in Netherlands, India, USA

Collaborative Application Development

- Focus on collaborative applications that add value beyond ERP
- Privately funded
- 250+ employees
- Close relationship with Cordys
- Lead architects of Baan Applications
- Offices in Netherlands, India, USA

Technology enables applications enables technology

possible for us to build everything from scratch in the late eighties. The further improvement of the software tools with an event-driven approach and much more and better library functions with complete independence from the database motivated us to start an elimination process for the third time.

Our experiences with Boeing have played an important role here. Analysts called it the most function-rich ERP system, and, in addition, it was very easy to implement due to the DEM methodologies. Many companies worldwide still work with this beautiful product. Ultimately, we should never have evolved into newer versions but we should have used this as the starting point for the vision below to link this with XML technology to an enterprise service bus and use our portal from TopTier as the graphical user interface.

In 1998, it was already possible to build a composition on top of existing legacy applications, such as BAAN-IV, supply chain management from Berclain, CRM from Aurum, and integrate with Microsoft Office. It was further possible to integrate other legacy applications into this architecture. Using a generic browser combined with web services technology, provided access to all the data of these systems on one screen and achieved full collaboration.

This architecture was, at that time, a breakthrough in the new internet world. But unfortunately, the new generation (Wall-street) executives of Baan had shifted their focus with their M&A approach from 'customer-driven' to 'shareholders-driven' value.

Ready for the new wave of enterprise software

During this important learning phase, we gradually started to build Cordys around three themes, which formed the pillars of our platform: integration, business process management, and application development. Keep in mind that this was in a time before SaaS and cloud computing was even known. To us, it was clear what kind of impact the internet would have on enterprise software. That vision, and the ability to execute on it, made Cordys ready for a new era in which the enterprise software market would experience a complete and fundamental change.

However, building a company ultimately means building value. There are two ways of increasing the value of a company's intellectual property in the IT industry: either through human capital for service providers or through technological capital for software vendors. The increasingly complex systems motivated me to start Cordys. The SOA with the BPM standardization offered the possibilities to decouple the complexity of the ERP systems and other legacy systems.

The old logic stored in the different silos could be made available via an enterprise service bus. This made it possible to focus on only once customizing the consolidated 'end-to-end'

processes. Moreover, this was no longer coded in old 4GL languages but built in the process models.

Therefore, this new logic was decoupled from the tables in the individual databases and could now be realized unlinked from a 'rule engine.' As a result, there was now the flexibility to constantly improve these processes at the highest level. 'What you model is what you get.' There was now 'one version of the truth' in a business process for the first time. But the most important thing was that we had the opportunity of 'aligning business & IT.' The biggest problem concerning the conflict between the strategy analysts and the IT architects could be resolved.

Impressive results have been achieved at Zurich (an insurance company from Switzerland), the Dutch Ministry of Defense, and CIZ, a Dutch Government healthcare division. The translation of the business to IT was now a collaborative process. Ongoing improvement was the slogan, and only then could we talk about operational excellence. Of course, this was still limited to the management of transactional and also mostly legacy systems. But in the BPM process layer, we could also use dynamic case models, where both transaction-driven logic and people-driven processes could communicate.

This turned out to be a breakthrough because we could now dynamically hold the underlying semantics of the data in the processes, while the generic logic from the old systems could still be used. This limited the dramatic use of huge amounts of static spreadsheets and decoupled document management systems. Of course, the limitation of logic in the processes was still in the legacy systems with their millions of lines of code from the last century. We are going to see that there are much better solution combinations that can replace these legacy systems. Think in this case of Salesforce or Workday, but more on that later.

Bridging vanilla legacy with business processes

As said earlier, we should have used these legacy systems only as a generic engine without modifications. We have to build the modifications in the second layer, what Gartner calls BPM solutions of the beginning of this century, which could have produced many savings in this layer.

But let's look again at the current generation of technology. We should now prefer Commercial-off-the-Shelf (COTS) systems from the newest generation of PaaS solutions, such as Salesforce or Workday. Incidentally, one must also be careful not to make too many individual adjustments here to avoid a vendor lock-in situation. In this second layer of processes, we have a grip on the 'end-to-end' processes, where BPM solutions integrate

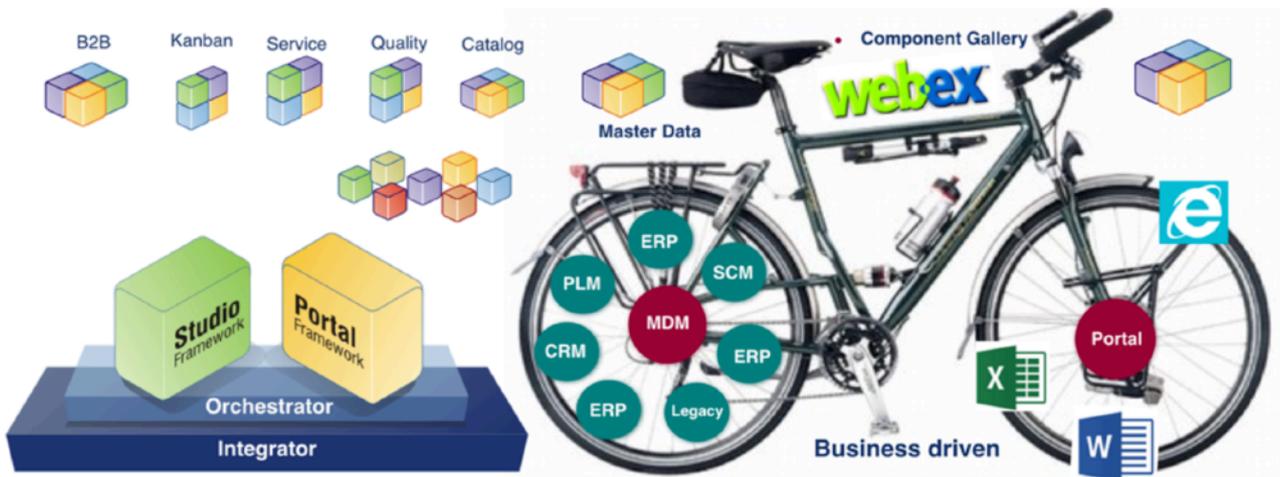
the underlying silos and make it possible to add new functionality at the level of the business processes.

Over time, more and more logic from the first layer's legacy systems can be replaced. With a PaaS system, all the logic of the various participants is available as an integrated system. Often these are combinations of BPM and PaaS. With BPM solutions, there is often the possibility to add case processes that are much more dynamic than the logic from the transactions. Ultimately, this second layer is still about traditional systems with almost only structured data.

Moreover, these systems are limited to the internal processes of the company or department, and the output of these processes is static in the form of a PDF document. The real added value is expressed in the systems of the third layer ('systems of innovation'); then, we are really talking about the digital enterprise. Workflow systems are becoming the turbo for the business processes to execute the task of the knowledge worker in the supply chain. In the aforementioned 'end-to-end' processes, we control the complete ontology of all underlying data. For the first time, we are talking here about 'one-version-of-the-truth.' We can now enrich this process information with powerful modern apps that precisely guide the tasks of the knowledge worker. These workflow apps are characterized by their collaborative design and increasingly replace the complex transactional logic from the first layer.

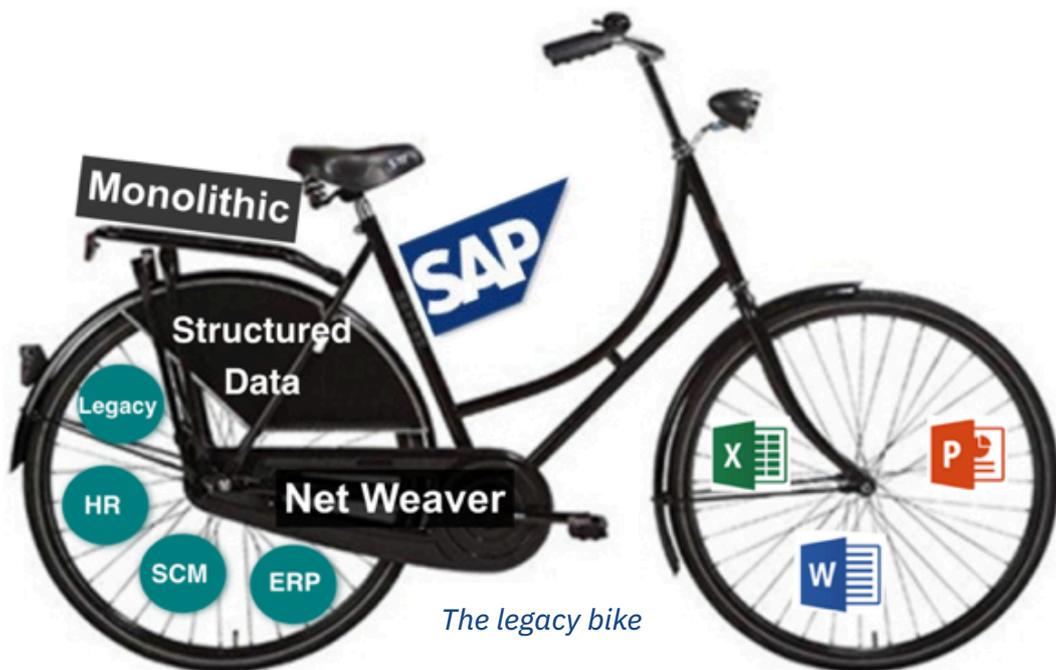
But we are talking about a totally different 'return on investment.' In addition to attractive investments, these apps contribute to the much higher productivity of the knowledge worker. These new workflow apps inherit the master data from the underlying back-end systems and make the complete semantics of all data available here. Through the use of available and powerful machine learning tools and artificial intelligence performing surprising analysis, knowledge workers are now supplied with initiatives. This creates new applications for better control of the processes in the chain. The communication with billions of sensors in the things around us can be better analyzed through machine learning and contribute to the knowledge workers' tasks improvements.

A description (made in 2000) of the meaning of the Cordys platform drew the comparison with a bicycle. This bicycle's rear wheel connects the various back-office systems (spokes via the hub) with a central Master Data Management (MDM) service to 'end-to-end' business processes. The front-wheel integrates the Microsoft office products and the e-mails in the TopTier Portal.



CaaS (Collaboration-as-a-Service) for business collaboration

The bicycle frame enriches these business processes and the tasks from the workflow in the Cordys orchestrator layer. At the time, we were still involved as an investor with webEx. We had launched an innovative project to strongly improve the knowledge workers' productivity on the WebEx meeting platform through these dynamic workflow-driven apps.



We had already built apps for B2B supply chain solutions and a Kanban app on top of the ERP backend solution. Furthermore, applications for service management, quality and also a catalog were in the making. In fact, we were already talking about a format that would become years later Gartner's Pace-Layered Strategy.

A combination of Vanenburg Group and Baan Company would have been an ideal M&A partner for Microsoft in their competition with Oracle. About 20 years later, we see the rear wheel filled in by PaaS platforms such as Salesforce and Workday, while the task handling in the front wheel can now be filled in much better by Google's cloud platform.

The services of the task-driven apps for the knowledge worker are now linked to IoT and big data. The idea, at the time, to use dynamic apps on the WebEx platform as a kind of ‘war room’ turned out to be too far ahead of its time. The takeover from WebEx by Cisco was a showstopper for this unique initiative (most M&A deals are R&D killers)! The same happened later when OpenText acquired Cordys, and all innovative projects were immediately killed.

A cartoon made in 2000 about the situation at SAP which explains the old legacy systems such as SAP R3 integrated via NetWeaver, with as goal to secure maintenance contracts revenue over the coming years. As a joke, we as Dutch often have the habit of comparing our bicycles with the Germans. We feel very good as cyclists. This is why I am joking about this comparison. SAP, therefore, assumed a monolithic approach to protecting its own old products instead of a BPM integration with ‘best-of-breed’ components.

Lessons

This initial phase before the official start of Cordys had taught us that we had to meet the following three requirements:

- An ESB is imperative. We had to be able to integrate a variety of disparate applications, preferably via an enterprise bus. This is a transaction layer over all systems for the whole company.
- Business processes have to be managed and improved across the different applications. Generally speaking, this is what is meant by business process management.
- Users require a unified and consistent interface across multiple disparate systems. This virtual desktop provides all the relevant information for a specific task, offers access to all applications, and automatically furnishes alerts and reports.

For these reasons, Cordys chose not to develop a monolithic application but an information system based on a federal model. The idea was that you build infrastructure and use it to link applications to each other in a meaningful way. The architecture had been designed in XML and was totally based on web services. It combined the three requirements mentioned above. Other suppliers also recognized this need but had chosen to buy individual products and linked them to each other. This resulted in complexity, whereas the Cordys platform was very simple, easy to use, and easy to implement.

The Cordys architecture provided a platform for ‘best of breed’ systems — combinations of the best components — via component integration. This meant we could extend the lifecycle of our client's information systems. The system provided the information to the user continuously when and how he required it.

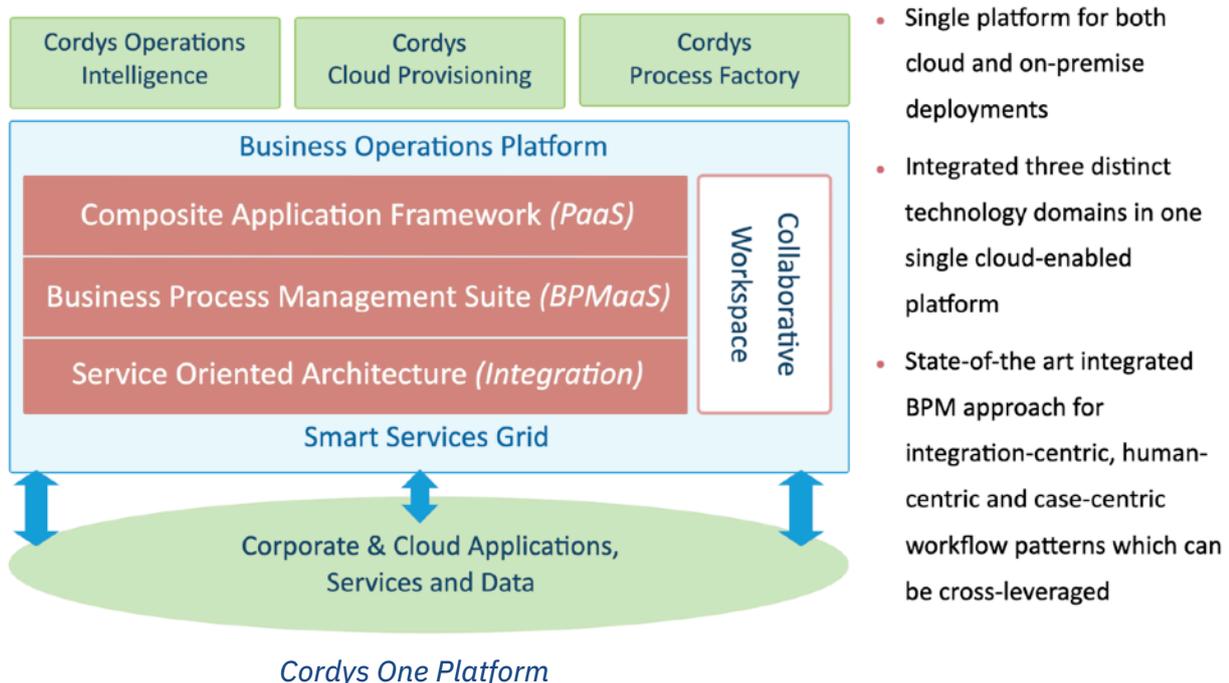
5. Cordys, our Business Operations Platform

Cordys BOP provides: a Service Oriented Architecture (SOA) grid as the horizontal integration layer, combined with a process orchestration layer (BPM), enabling alignment between business and IT for the first time. We saw how Cordys BOP brought Business and IT into alignment for the first time in IT history. In this section, I would like to shed some light on the technology behind the business operations platform. Some of that goes back as far as the 1998 Baan Company users conference in Denver.

To keep our focus on long-term research, I had created a small team of the best technical experts headed by Theodoor van Donge. It was their task to look at what should succeed 4-GL. This was known as object-oriented software development. Unfortunately, this team could not withstand the pressure caused by Baan’s acquisition strategy and the short-term objectives from a company listed on the stock exchange.

As described earlier, the agreement with Baan Company allowed me to transfer Theodoor and his team to Vanenburg Group and start building an ESB between BAAN-IV and TopTier’s product. Baan Company would thus be the first in the market to have equipped its ERP product with XML web services. Moreover, the TopTier portal was expected to be the market leader in the mid-segment. Baan took receipt of the first version of the integration bus and called it Baan Bus. This became the basis of the ‘Baan Open World’ product. In fact, this is where Theodoor started to build the Cordys platform from scratch.

After the partnership between TopTier and SAP, the role of the TopTier staff and their technology became so critical for SAP that they ended up buying the company in 2001.



What a business operations platform does

One of the key innovations is the collaborative nature of the platform. It is an environment that allows, and even encourages, the business world and the technology world to align. Given that the business process is where these two collide, BOP becomes the place they can achieve the most in terms of collaborative development and common understanding. Thereby eliminating the risk of misunderstanding. The Cordys business operations platform was built on three pillars: integration, BPM and rapid application development.

The business operations platform performs five main tasks

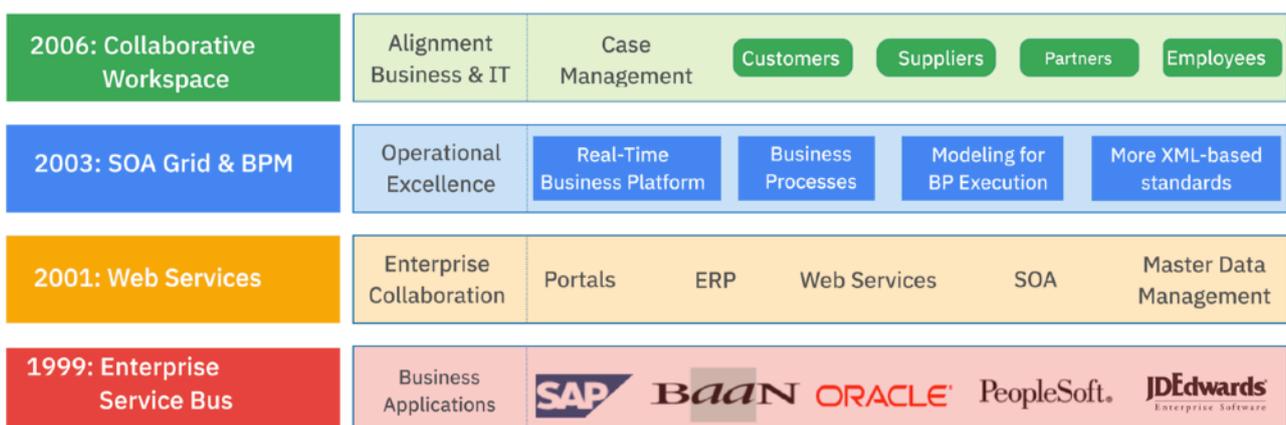
1. It puts existing and new application software under the direct control of business managers.
2. It facilitates communication between business and IT.
3. It makes it easier for the company to improve existing processes and create new ones.
4. It enables process management across the entire organization and beyond it.
5. It gives managers real-time information on the performance of processes.

During the implementation of BOP, businesses can benefit in the following ways:

It is no longer necessary for customers to make drastic changes to their ERP systems. This should assuage the concerns of many who are still scarred by their experience with complex and unsuccessful ERP implementations.

- It is no longer a 'Big Bang' investment. With our methodical approach, Cordys@Work, it was possible to employ the 3+3+3 method successfully. In a 3-day workshop, a new business process is designed and concluded with a management presentation. The new process will be implemented in just three weeks in a proof of concept, resulting in a working prototype. The new process is installed in a full-blown production version within three months, ready for use, and embedded in an organization. After this initial period, the process can be changed and improved continuously, and other processes can be added.

Long R&D history via IT abstraction levels to become platform agnostic



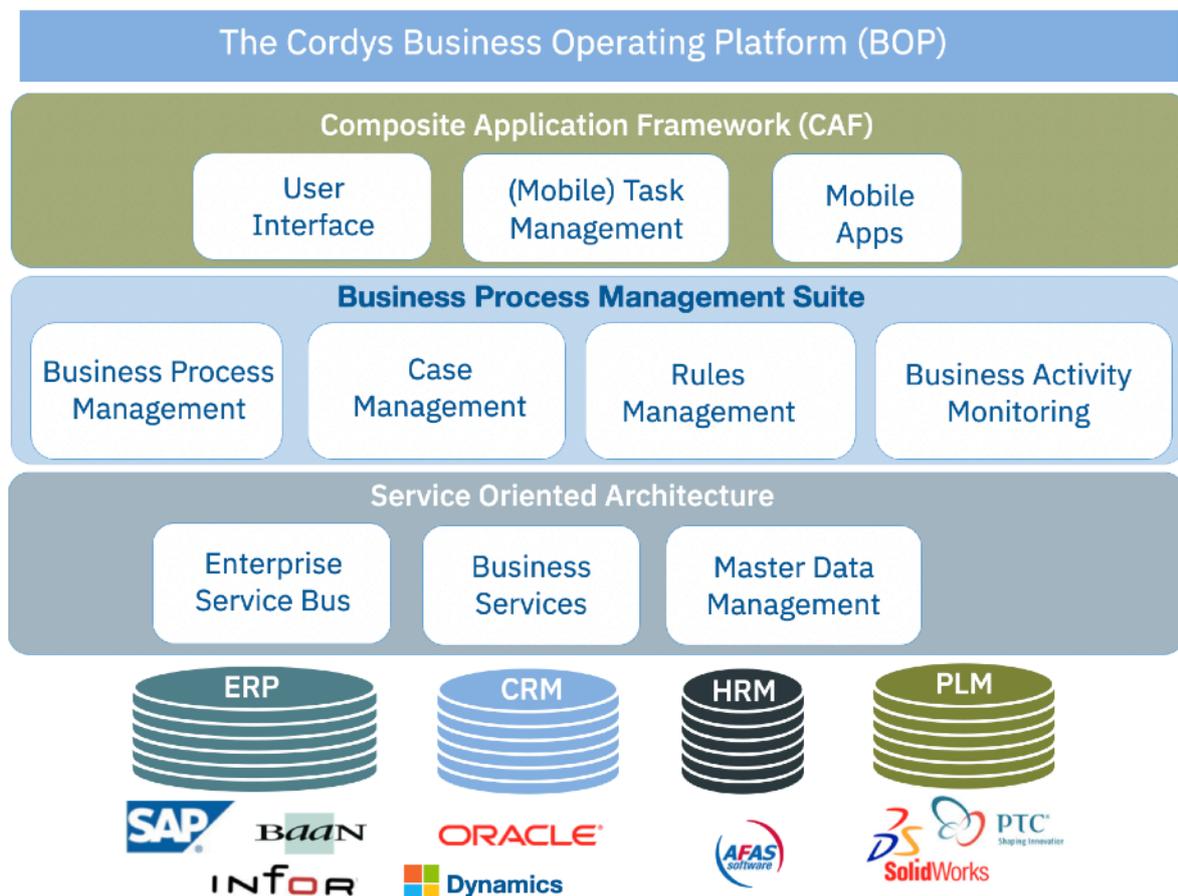
Using the business operations platform, many of our customers had achieved measurable business benefits such as increased customer satisfaction, reduced costs, higher revenue, and faster time to market.

Standardization and componentization with Cordys in 2001

As mentioned earlier, companies have invested billions in software applications; however, all these applications are based on different technologies and are not geared to one another at all. Therefore, the question of how all these systems can work together is key, as is the question of how employees can make optimum use of them. All these hundreds, even thousands, of different systems were developed from a supplier point of view and without any standardization.

They all speak different languages, and history has shown that when there is confusion at a linguistic level, cooperation comes to a standstill. Each solution only functions optimally within its own environment. We have to overcome this situation by working with standards and agreeing on how we will communicate.

Moreover, everything being developed within a single system has led to complete dependence on the IT supplier. To solve this problem, we must think in terms of components. For example, components are developed and manufactured by different



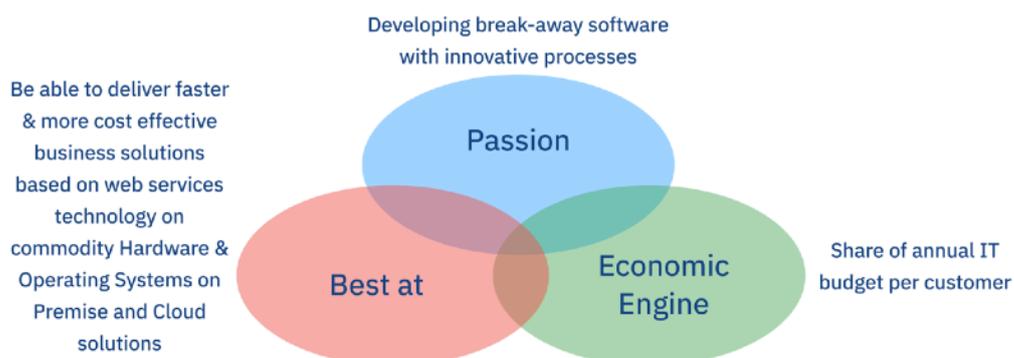
suppliers in the car industry and electronics companies and integrated into one simplified end product.

These components can readily be integrated and replaced, or changed. As a result, we can easily insert a memory stick in a USB port or replace a graphics card in a PC. So, what about software? If you develop software components within your environment and with just your own agreements, this will only work if everyone speaks and uses your language.

Unfortunately, this is not the case. Suppose you want to avoid such a scenario and leave existing un-componentized systems intact. In that case, the point of departure must be that the new architecture should cooperate with existing systems without being dependent on the runtime environment. The vision we developed for this converged with the arrival of the IT industry-standard XML. Cordys components were not dependent on the runtime and were based on this standard.

We defined several points of departure to develop the most desirable model. In the development process, you do not need to determine in advance how you will deal with data, events, and necessary actions: this can wait until the very last moment. Take the analogy of containers in the Logistics Industry; XML has become the container for packing and transporting data, transactions, and so on in such a way that anyone in any system can reuse them. This technology for packing and transporting objects has become known as web services.

At that time, the situation required an architecture that allowed us to easily integrate legacy systems with new web-based applications. After that, continuously optimize business processes, where components could be integrated just as simple as inserting a card into a PC. This architecture must be simple to install, very scalable to handle large quantities of data and transactions, and always available. Your transportation cannot



Cordys Hedgehog consist of understanding the 3 circles in combination of our core values that drives everything we do at Cordys: Passion, Respect, Ownership and Guts

suddenly come to a standstill. Or, if the transportation is not available, the container cannot disappear or need to be made or even shipped again.

Imagine such a thing to happen in logistics: it would be like a container ship sinking to the bottom of the ocean. Moreover, it must be possible to use existing transportation mechanisms. We are proud that at Cordys, we came up with a unique solution that helped our customers tremendously without making them dependent on us.

Model first, then generate

Model the process flow as the starting point with BPMN as standard notation and BPML for fast execution. Then you model your composed business object via the Cordys Composite Application Framework (CAF), which supports both SOAP and JCA. Model the UI on X-Forms and, with a single click, generate the webservices by code generation through AppServer. Plug the holes in your business logic by using plain Java. For a 4GL way of working: only fill in the events in a custom class. The benefit of ‘model first, then generate’ is higher developer productivity and a reduced need for technical designs and code documentation.

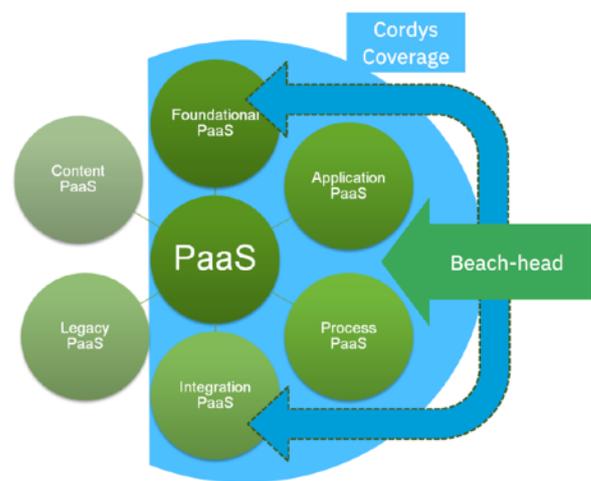
Lower barriers between business analysts and developers because the analysts model their ‘code’ first and the developer ‘plugs the holes’, which means a less error-prone process, with reduced communication, is required while upfront model- time consistency checks are possible. This resulted in faster time to market, less rework, lower project costs, and faster ROI.

PaaS styles and Cordys positioning

- The Cordys Smart Services Grid and Collaborative Workspace were the key technologies from a runtime- and design time perspective supporting highly scalable, cloud-centric, and model-driven architecture.

- ✓ **Foundational PaaS**

Cordys supported foundational PaaS through various scripting languages and Java programming interwoven with MDA capabilities in the platform.



Categories of PaaS - Forrester

✓ **Application PaaS**

Cordys CAF and entity modeling supported the development of sophisticated applications that run either autonomously or are fully integrated with existing SaaS or on-premise applications.

✓ **Process PaaS**

Cordys BPMS supported all workflow patterns ranging from system-centric to human-centric and dynamic case management.

✓ **Integration PaaS**

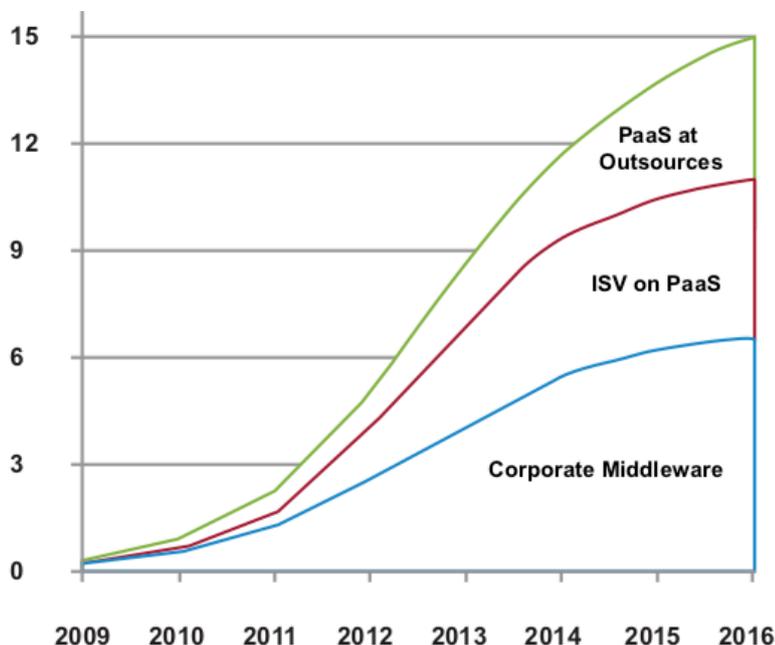
Cordys ESB and MDM supported robust and deep integration of cloud and the on-premise application for data, messages, and transactions.

Cordys R&D - agile software development

Cordys had taken the practice of agile software development to an advanced level after having adopted the agile technique for more than six years. The uniqueness is in aligning software development and delivery towards lean management learnings of companies in the manufacturing industry, like Toyota. Cordys continued to perfect its software delivery for a while, using the lean manufacturing leaders as our examples.

Agile software development is preferred above the traditional software development methodologies since it is an innovative product development technique bordering on complexity, as opposed to the structured traditional project-based approach of software development that typically uses variations of the waterfall approach. The image on the right emphasizes this difference and how the agile development process plays a fitting choice of software development methodology for Cordys.

Forrester predicts that Platform as a PaaS will soon become a US \$15 billion market.



Product value stream

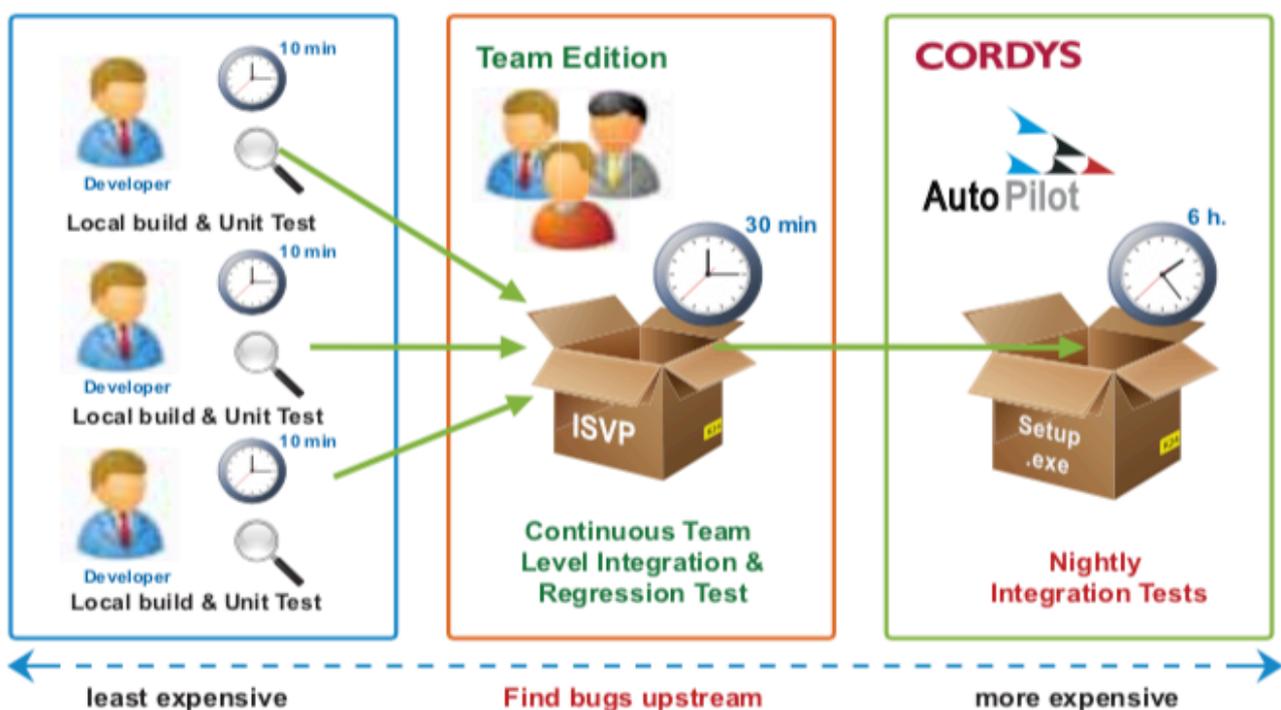
As with any manufacturing process, the product value stream of Cordys software development was a high-level execution blueprint. The product value stream depicted here shows the various stages involved in manufacturing software and the enablers involved. The software development starts with vision and strategy input, combined with a roadmap generation process involving the engagement of the various customers/users for feedback of the software. A global interactive setting called the product management board enabled this strategy-to-development process. The product management board defined the roadmap for the following quarters. It is key to have a short-term view of the product roadmap to be agile in addressing market needs.

Autopilot - automated regression testing infrastructure

The crown jewel in Cordys quality assurance was the nightly regression tests that are run every 24 hours to ensure the continued validity of the software. A massive test suite of over 30,000 test cases is run over different environment combinations, such as Windows & Linux, with test reports generated on the quality of the software. It is imperative to maintain the regressions at a stringent 100% success rate, with failures being addressed every morning to have the software back on track with regard to expected quality levels. Since the cost of bugs found exponentially increases later in the delivery cycle, running the daily regression early in the process ensures that the cost of bugs is kept at a minimum.

The picture above gives a view of the autopilot-based regression testing. The autopilot infrastructure has been 100% developed in-house to ensure a perfect fit for quality needs.

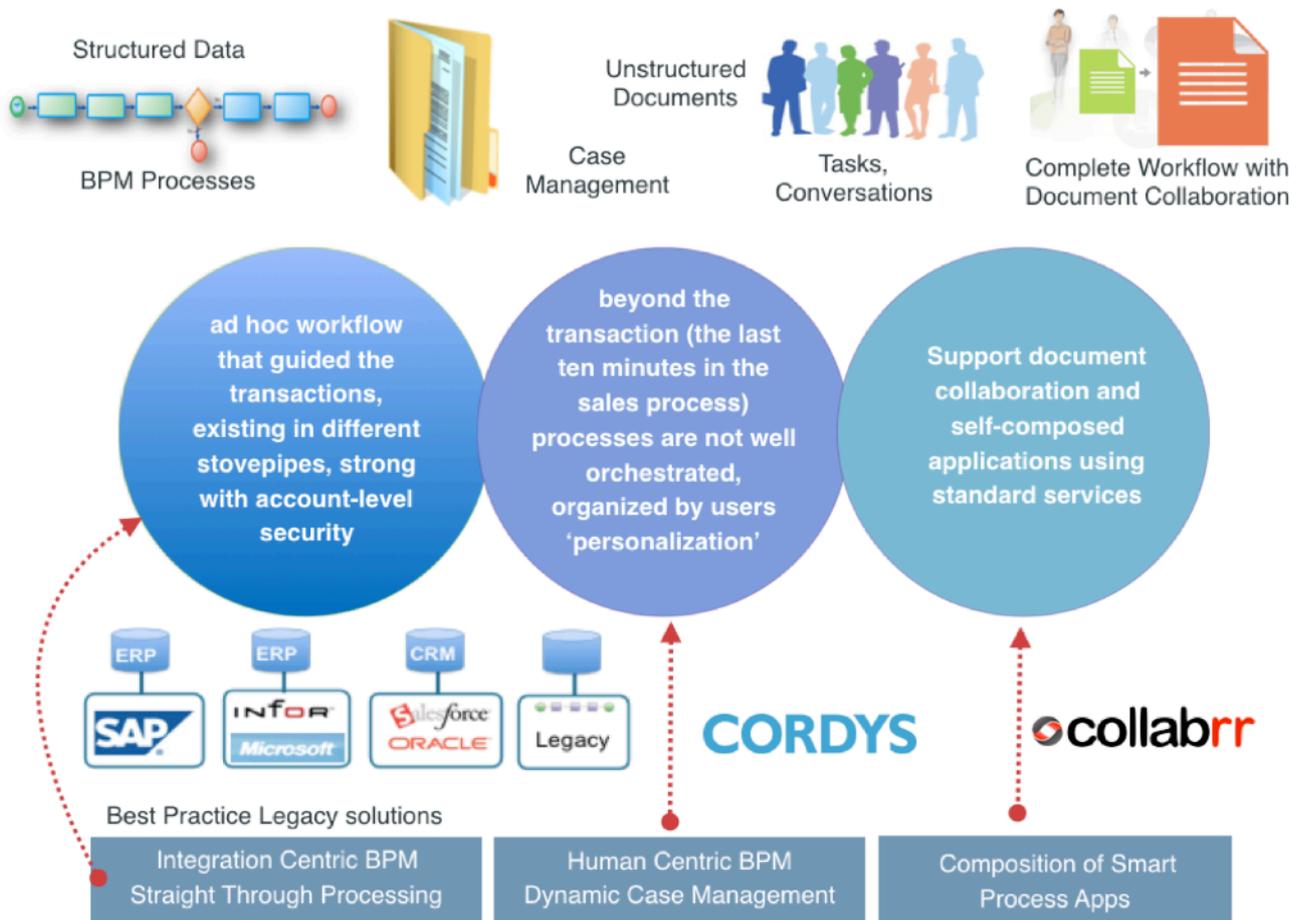
The agile way of Quality Assurance



Collaboration among all our engineers, located in different continents, was the critical success factor for our development strategy in our software factory. The R&D team structure was decoupled between many small teams, yet all those teams worked towards one integrated end product with our agile development methodology. Cordys R&D focused on innovation, based upon continuous improvement, as seen in lean manufacturing. Cordys was building open software with open standards. Open to learn from others. Open-minded. Open for business.

BPM, Case Management and workflow task

The graphic below provides insight into the three core areas that control the IT landscape. The first circle describes the integration of the ‘Best-of-Breed’ subsystems that still function as best practice silos, even though they are now creaking with old age because they were built in the last century. The ‘service-oriented architecture’ has made it possible to use only the core functions of these silos and then enrich them in the BPM process layer. The input for the business processes is still limited to structured data that is controlled from transactional logic.



Core features of BPM, Case Management and Workflow tasks

With Cordys, we have enriched this SOA platform with a Collaborative Workspace. We combined the traditional transactional silos and the human-driven processes (Dynamic Case Management) into a joint process-driven service. It was also possible here to bundle the information from unstructured documents. As a result, the lifespan of the end-to-end business processes were extended (downstream), preventing the knowledge worker from resorting to scattered spreadsheets and isolated documents. This enabled us to consult virtually all inbound business processes as ‘one version of the truth’ by all employees in the company. Incidentally, this innovative technology is still operational at companies.

However, the biggest challenge comes at the cutting edge where the internal processes pass into the outgoing tasks, the workflow. Here we are dealing with the most unpredictable chaos. After all, every individual goes their own way here. Through e-mails, word documents, spreadsheets, Sharepoint, and social media such as Facebook, we carry out our tasks with static data that we once obtained from the back office systems.

So, we are constantly working with outdated data. Although it seems that we now digitally communicate with PDF, we are deceiving ourselves. An actual digital Enterprise can manage the primary semantic data as ‘one version of the truth.’ Our experiences as Vanenburg Group in the above two circles on the right have made it possible to bundle all data within a dynamic document.

We are now able to link the underlying logic of the Legacy Systems through an ESB in ‘end-to-end’ business processes with the integration of the underlying dates from a relational database, now store in one in Meta-data environment. But we still remain stuck in the (although coupled) back-end systems, which are now made accessible from an internet browser.

BPM as the standard for human & system workflow

In recent years, the standardization of business processes has become a commodity. Every supplier commits themselves to BPM standards. However, there was still a huge problem. Even though all processes could now be described in detail, there were still two different trends. Many vendors were working based on the Enterprise Application Integration (EAI) concept and could offer BPM compliance solutions in a system-to-system approach. But this provides no flexibility in the execution of the business process for the user. On the other side of the coin, you had the workflow providers, who offered a more flexible approach for human-to-human interactions, but this lacked integration with back-end solutions like SAP, Oracle, and Infor.

Our years of development in this area appeared to put us in a position to solve this problem once and for all, a feat that remains unique to this very day. The solution for both system-

to-system and human-to-human, and every combination derived from the two, covering the world of structured workflow and case management in one single design environment, we called the Collaborative workspace.

Given the luxury of not being locked-in with many installations in the field, we were able to transform our platform (between 2007 to 2008) to implement the ideal Collaborative Workspace (CWS) in a single stack. I believe that this was the last total redesign of our platform. With that we had a unique and complete ecosystem for the future. Only incremental improvements would come, and this made it easy for our customers to implement future releases. With this strategic redesign, we made it really difficult for our competitors to follow us on this journey. Our new Business Operations platform benefitted from our 25 year experience in helping customers with world-class enterprise solutions.

Cordys studio for business process re-engineering

In addition, we developed a process modeler that approached applications from a business process perspective, just like we did at the end of the 1990s. However, the major difference now was that it was an XML tool, and in addition, we also built our own 'flow and rule engine' into the model. First and foremost, Cordys Studio represented a significant breakthrough in the area of business process engineering.

The subsequent version of the platform solved numerous problems related to building web applications. We then started afresh, but this time at the level of composite applications. Once again, this approach has proven a difficult test and challenge for the Cordys tool builders. Without any pressure of quarterly revenue targets and shareholders, the lessons learned in this period have been very important for the company. The technological innovation and the opportunity to test the new platform in real-world situations led to the three pillars which formed the foundation of our current platform:

- SOA based integration
- Business process management
- Composite application development

These three pillars, a platform developed from scratch and focused on web services, had given Cordys the perfect pioneering role in the new technology wave. A wave that would evolve much later into the 'cloud.' The architecture we had developed to deal with large ERP systems and to manage multiple organizations or administrations in one platform had become a success factor for Cordys. This answered one of the key requirements in cloud computing: multi-tenancy (an architecture in which a single instance of a software application serves multiple customers; each customer is called a tenant.)

Security

Of course, security at an atomic level is a crucial element of cloud computing. At Cordys, we had been resolving this issue structurally for years. Because we opted not to include the object status in an XML object, it is also possible to handle document security in the same architecture. What's more, the compliance status is also traceable.

Internet security has been an important subject for a long time. At that time, the company Walance, a spin-off of KPN, invested a lot of capital and energy in it. The technology developed turned out to be unprofitable in a specific security business case. We were able to purchase this technology in 2003 from the trustee and incorporated it into Cordys from scratch. The result was a unique holistic approach to security throughout the platform for safe integrations with the extended value chain and the cloud.

How composition changes the game

For Cordys, process management in the cloud was not about BPM on-demand. The term 'BPM on demand' is traditionally used to describe SaaS that delivers a BPM on a subscription basis. Similar to customer relationship management (CRM), applications are offered as a service (e.g., Salesforce.com). It's a third-party, Cloud-hosted alternative to bringing in a BPM suite in-house.

However, the cloud can deliver an infinite number of business software services to all who need them, which means we need a mechanism that makes it easy to orchestrate those services, integrate them with on-premise processes and deliver maximum flexibility. This is where a new meaning for 'process on-demand' comes in.

Process on-demand means having the capability to call up business services when needed, to change or improve a process already being executed.

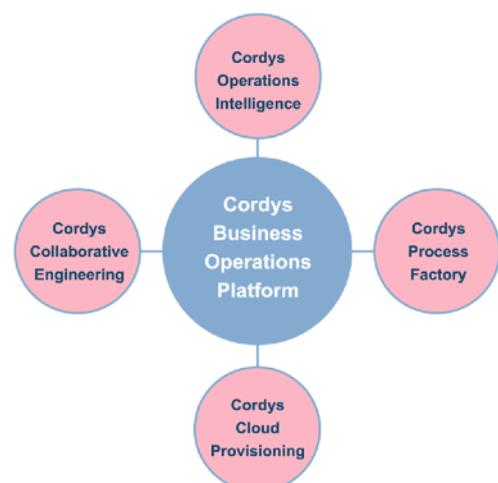
These services are far more sophisticated than simple 'get data/put data' activities. We have services that contain:

- User interface
- Business rules
- KPIs
- Metadata

In short, we have everything that makes a self-contained application all wrapped up as a service so that it can be incorporated into an end-to-end business process.

Why do I need this type of capability? In one word: 'simplicity.'

One Single Platform & four solution frameworks



When developing business processes, it is often very difficult to determine what documentation, sub-processes, timing, and dependencies of tasks will ultimately be needed to accomplish some given requirement.

For example, in designing a process to handle an insurance claim for a traffic accident, the analyst may know that the customer will need to get his car assessed for repair and that payment may or may not be forthcoming. The analyst may not know the types of documentation (e.g., the mechanics costing, police witness reports, and hospital bills) that will potentially be required to process the claim, nor will they know the dynamics that determine the possibly many documents to use.

These interrelated paths through the claim process may already have been defined by different people in other parts of the organization as self-contained business services or sub-processes. They may be changed frequently as the procedures and rules change. In such cases, the main claim process can't determine, even dynamically, what particular services to use. The developer knows that a particular goal is to be achieved, but exactly which service can be used to achieve it cannot be easily determined. Nor, in fact, does the developer care; who simply wants the goal accomplished suitably.

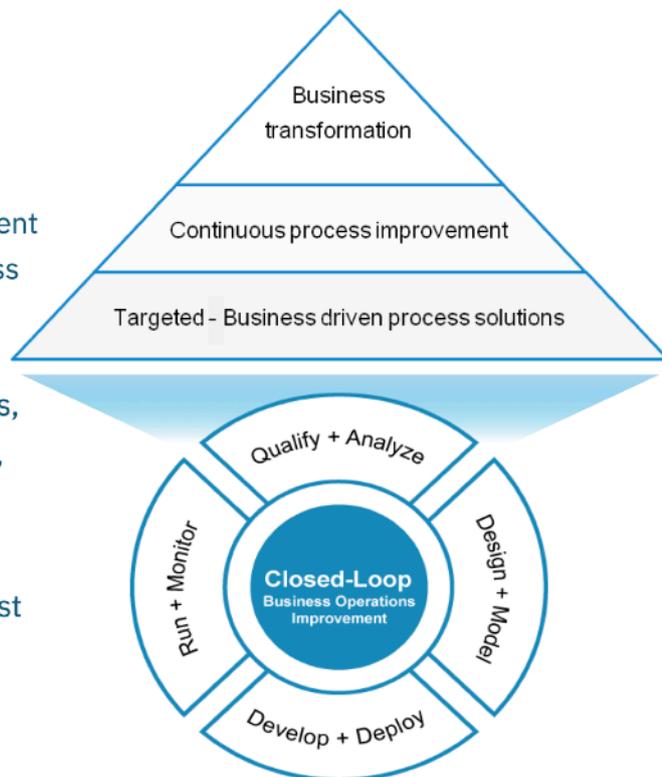
Business transformation driven by business needs **CORDYS**

Cordys supports stepwise and iterative approach to business transformation:

- Start with targeted – business driven process solutions
- Evolve to continuous process improvement
- Transform the business one step, process and project at a time

Each project has its own tangible benefits, is a stepping stone for reuse and harvest, then move on to the next

Achievable business transformation whilst delivering business value with every process project.



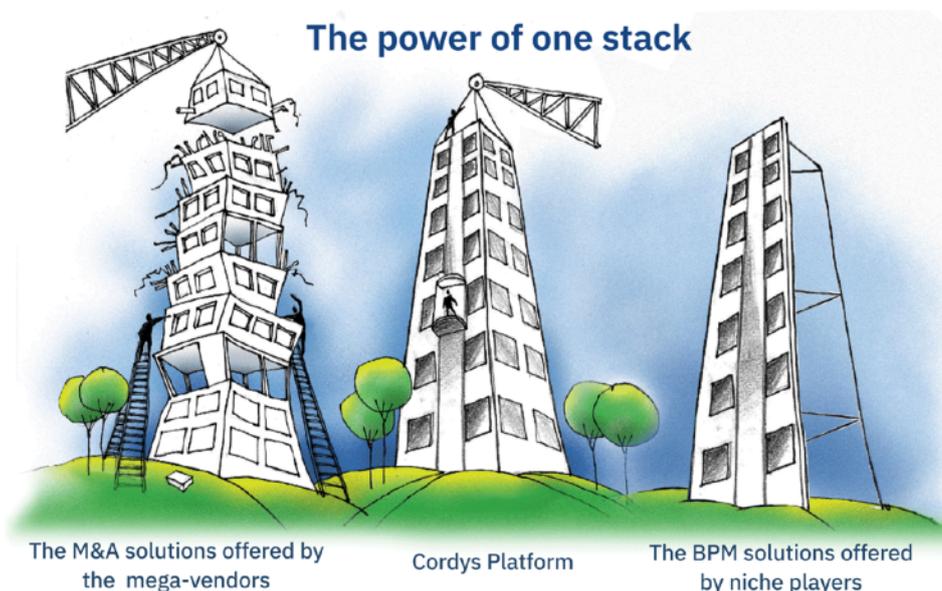
To solve this problem, we need a repository where we can keep the services for use by the company. What differentiates these services from sub-processes or data integration tools is that our cloud applications know what each service does, the circumstances in which it can be used, and the required goals and outcomes. This approach significantly improves the development, agility, and scalability of business processes.

The primary process is simple. The ‘happy path’ is therefore easily understood. New services can be added or removed without any change whatsoever to the calling process or processes. So, process on-demand provides a simple and effective way of defining processes that completely encapsulate their definition in self-contained, semantically complete business services, significantly increasing agility and scalability as a positive side effect. That is the real power of BPM, SOA, and CAF in a cloud strategy.

Together in a single platform is the biggest differentiator

The previously mentioned developments came together in the Cordys Business Operations Platform. The platform consisted of a complete suite of advanced business process management, business activity monitoring, and the innovative use of SaaS. In short: a complete PaaS solution.

It also featured an open, integrated toolset and technologies such as the composite application framework, master data management options, and an SOA grid. However, the big picture is that the platform and the associated cloud technology provided customers with the tools to radically enhance the way they do business. They can react with lightning speed to changes in the market. This, in turn, would enable them to offer their customers several competitive advantages.



Responding faster to new market conditions

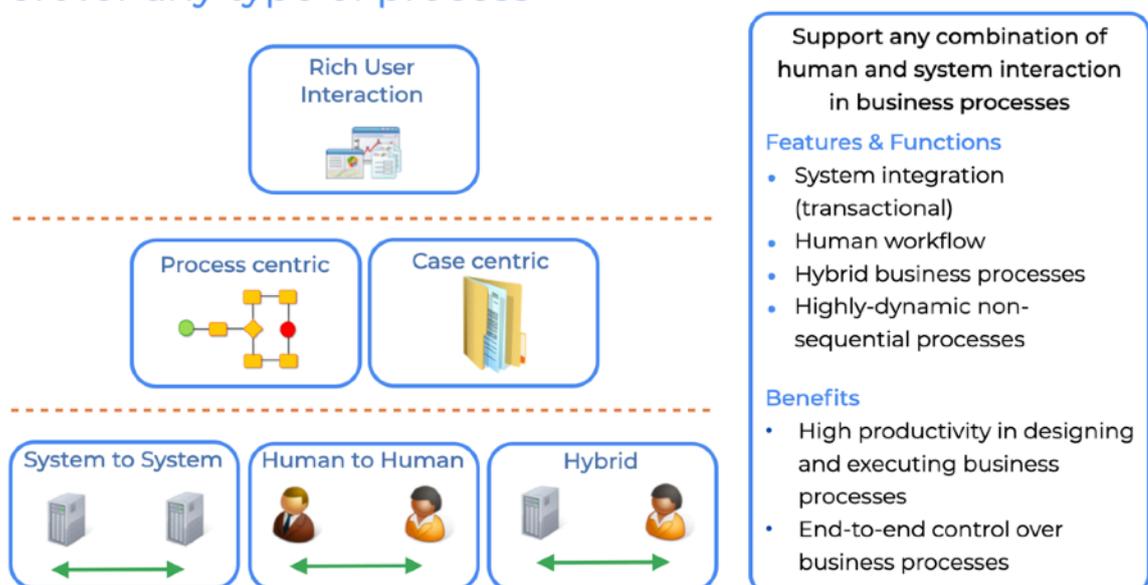
Hardware, software, globalization, and the web have created conditions for extremely fast innovation and rapid, consumer-driven adoption of new technologies and functionalities. The result is that today's business climate is extremely competitive in almost every industry. Speed is all about response to higher customer expectations in the online channel, implementing legislative changes and new compliance rules, or responding to unpredictable market conditions.

From cloud provisioning in the communications industry to case management for insurance companies and smart metering for utilities; the Cordys Business Operations platform empowers leading companies – across a broad range of industries – to quickly solve these and other critical business challenges by giving them complete control over the internal business processes and allowing collaboration within the entire supply chain.

Understanding the fundamental elements of the cloud

Like what we experienced in the world of on-premise applications, managing processes across applications in the cloud is also necessary to break through the functional stovepipes. The automation of processes is a key enabler of the cloud phenomena – without BPM, the cloud remains an environment that undoubtedly saves you money and removes some of the operational headaches but does little else. The cloud without process cannot deliver on the promise of the service-oriented enterprise. All of the thoughts and ideas around assembling applications quickly to support a business initiative simply won't happen without process technology. To this end, we had designed the Business Operations Platform specifically with cloud deployment in mind.

Support for any type of process



PaaS: The Cordys Business Operations Platform was a process-centric and flexible platform for developing business applications in the Cloud. Deployable as a complete Platform as a Service (PaaS) solution, this innovative approach delivered an application server, middleware, integration, and BPM capabilities where and when needed. The Cordys platform delivered dynamic business service provisioning via the Cloud, enabling the composition of user-specific applications based on packaged and custom-built business services and enabling dynamic orchestration and provisioning in a multi-tenant environment with no capital expenditure.

Cordys application landscape built with BOP

ERP implementation without customizations: Cordys implemented Infor ERP LN for finance and project management in all of its offices. As Cordys offices were located across the globe and had their own regional style of working, there were many requirements for customization. With the use of the Cordys Business Operations Platform, the customization logic was moved to BOP, which made it very easy to meet the business requirements and implement the ERP with ZERO customizations. Future change requests could be implemented fast and easily in BOP without touching the complex ERP system.

iMaster was the central data hub for common data. iMaster was an autonomous infrastructure that used the Master Data Management (MDM) functionality of Cordys BOP to integrate master data and related data across systems and business domains such as ERP, HRM, and financial applications.

All business applications used iMaster as an authentic and central source of master data in real-time. Any change or update at the source system was immediately synchronized using Cordys MDM. It provided Cordys with real-time, accurate, and consistent information at all times and a single view of the entire business. The Cordys Support Center was a web-based system and was making use of the cloud provisioning functionality of Cordys BOP. It replaced a PeopleSoft support system and a Clarity service desk application and integrated several other systems. The Cordys Support Center was used to provide support to customers, partners, and employees.

The launch

We focused on the introduction of the Cordys platform, which was going to be unveiled in September of 2004, and version 4.2 had to be ready for this. The company entered its second phase, that of a client-driven focus; this was the second time around for me. Because of this new phase, we had to end the phase of merely offering web components for the Baan installed base. Once again, I discovered how important it is to have a good company culture in periods of uncertainty and change. It is all about trust. The event of the

Hyderabad | 2009

Cordys, software provider for business process innovation, on Thursday announced the general availability of its industry-leading Business Operations Platform (BOP-4).

'It is an ideal solution for businesses looking to leverage existing investment in enterprise software and legacy systems, build new processes and continuously monitor the entire enterprise,' said Jan Baan CEO and Chairman, Cordys



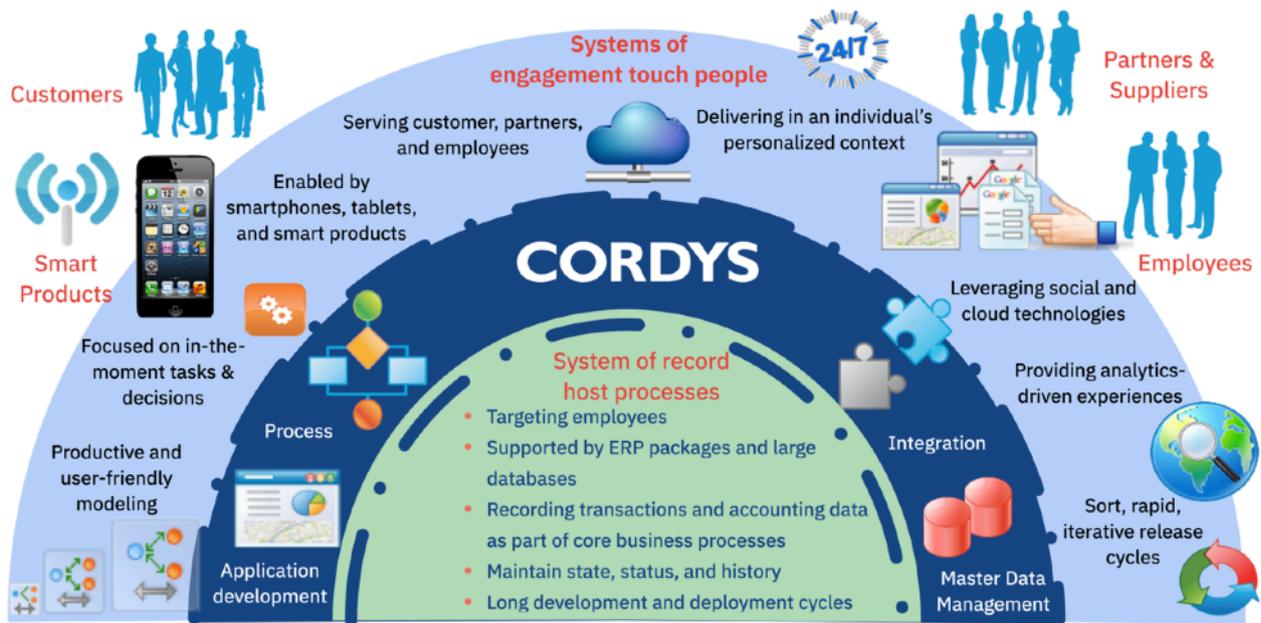
Launching Cordys BOP-4 in 2009

product launch was called Cordial. We went about it on a large scale, with over four hundred international guests at Kasteel De Vanenburg in the Netherlands. The fact that Vanenburg Group owned this renovated mansion and all its facilities proved highly useful during this event. It created an atmosphere of accomplishment and success, which typically is not associated with small start-ups. People understood that Cordys was serious about launching a new platform and could become a disruptive force in the traditional enterprise software market.

Cordys runs on Cordys - drinking your own champagne

The value of the IP of Cordys is in the software. Innovation should always lead to clear business benefits, which can only be achieved by using the software. The proof of the pudding is in the eating. Testing software as part of the development process is insufficient, and valued customers cannot always be part of beta-programs.

The solution? Always use your own product first. However, the typical management team is usually focused externally on achieving revenues in relation to their budgets — and they may not consider 'selling' their own products internally. Being at the helm of a private company, it was easier to use my authority as an entrepreneur to force our teams to implement our own products and make us an early adopter of new technology. This, for me, was an important role. As a result, Cordys had practiced the 'drinking your own champagne' principle for many years.



Cordys is a next generation software platform that supports sophisticated development of - and integration & orchestration between Systems of record and Systems of Engagement

Through this,

- Cordys had the opportunity of testing out leading-edge technologies by using them ourselves
- Our developers received feedback faster
- Collectively, we gained even more awareness and confidence of Cordys' position as one of the world's leading software factories.

Thus 'drinking your own champagne' helped Cordys, as an organization, maintain our outside-in innovative edge — with credible awareness of the vision and reality of the latest technologies we produced.

In 2012 we realized the significant shift on the technology front of the Cordys BOP. The combination of cloud, mobile and social media causes a significant change in business operations. Cordys allowed customers to innovate the way they do business with new speed and greater flexibility.

Why could Cordys be different?

Cordys' approach was a combination of great technology, smart solution delivery methodologies, and excellent execution, which differentiated us. We delivered more efficient and flexible business solutions based on- and enabled by a 'late binding' single open- standard-based (XML) architecture.

We did this at a lower total cost for customers, with dynamic measuring and improvement of the business processes, combined with collaborative data warehousing. This made it much less complex for business integrations, as solutions were based on integration points in the business processes instead of the data model. Those developed solutions were based on a proven business process-driven development approach, resulting in more flexible solutions.

Moreover, they were agnostic to any technology and avoided a vendor lock-in situation, which guaranteed investment protection for any future demand. Those proven implementation methodologies allowed organizations to transition from old static business models into new adaptable business models.

Proven business cases with reference customers were available to back up the unique Cordys business value. Those value propositions were all based on our deep domain expertise in technology. Our strategy was to build around extending product lifecycles of existing applications and introducing new functional components to make business model changes fast and effective.

Our comprehensive ISV network strategy complemented the business solutions available in the Cordys technology, allowing us to extend our footprint within the customer base.

Web services everywhere made our platform open to all technologies with the object model loosely coupled to the runtime environment, where existing 'legacy' systems are used and integrated with the XML object model. Data events and actions were linked at runtime by the concept of 'late binding,' combined with optimistic locking, which reduced the required locking time of a record in a database.

With traditional (J2EE/.NET) offline objects, the stateless object (proxy) consumes services of a virtual object, where state management is required for the service consumer of the actual object (like a customer record) in a database. By using Cordys, no state management was needed.

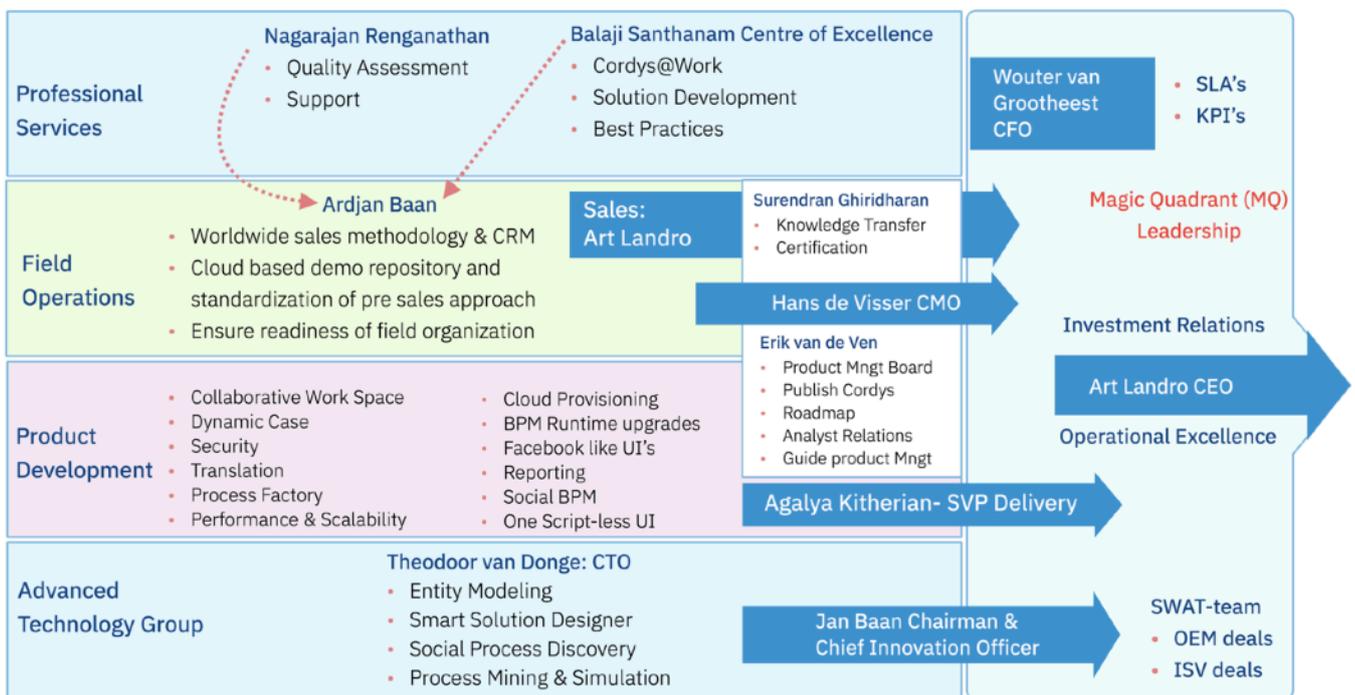
Key value proposition for SAP-Customers

- Cordys had been selected as the strategic cloud platform by end-users, ISVs, and technology companies.
- Amongst these customers were joint customers of Cordys and SAP.
- We observed a pattern of large enterprises seeking for SAP agility layer in the cloud.
- The Cordys platform offered SAP-Customers an immense opportunity to dominate in the next wave of cloud platform adoption, in the current SAP installed base and, more importantly, beyond.

Seasoned and accomplished management team

Cordys was an early bird by adapting the Service Oriented Architecture (SOA) at the end of the last century. SOA is an architectural style with the goal to achieve loose coupling among interacting software agents. A service is a unit of work done by a service provider to achieve desired results for a service consumer.

Both provider and consumer are roles played by software agents on behalf of their owners. SOA is not just an architecture of services seen from a technology perspective, but the policies, practices, and frameworks by which we ensure the right services are provided and consumed.



Cordys strategy management board

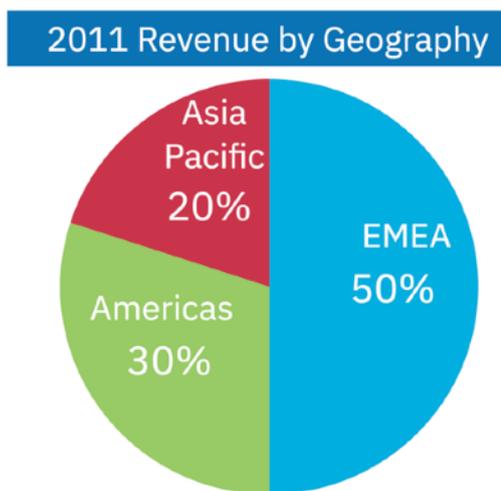
We were convinced that Cordys was positioned to take a market leadership role for SOA. It would create a market value of over \$ 1 billion in a few years through delivering high-value-based solutions. The custom business solutions for mass customization would be a more efficient and cost-effective way of reaching a high volume delivery model for mass delivery through Independent Software Vendors (ISV) and application vendors.

The market for infrastructure enabling SOA matured rapidly. A major shift was happening to move from monolithic data-model model-driven architectures to loosely-coupled component-based architectures using web services integration technology.

Vendor consolidation was on its way, and competition had increased. Acquisitions of 'non-leading' software vendors by Venture Capital or prominent application integration vendors

as IBM, SAP, and Oracle, were happening and turned web services technology into the standard for internet communication. The distinction between product and services companies was getting blurred, creating pressure on product sales price and license revenue.

Multi-technology paradigms co-exist in the current IT environment of larger enterprises, where old-product lines run mission-critical systems, and Open-source capabilities impact the SOA market. Cordys' software helped businesses to improve their business operations through a more flexible and rapid approach and by changing IT systems to meet business requirements. Cordys had a proven track record, with over 250 customers, many in the Global 2000, across 20+ countries. We sold the software primarily under a perpetual license model, with a growing subscription business in cloud provisioning and PaaS.



Executive	Title	Background
	Art Landro Chief Executive Officer	<ul style="list-style-type: none"> • Art Landro oversees all Cordys' activities and is responsible for the execution of the Cordys strategy in line with Cordys' mission and vision. • Art is a seasoned IT professional with over 25 years of sales, manufacturing and product management experience in the Americas, Europe, and the Asia-Pacific region. • Prior to joining Cordys, Art served as president of MontaVista and held several senior executive roles at leading high tech companies, including EMC and Documentum, as well as senior sales executive positions at Cadence Design Systems and General DataComm. • Art holds a BS from the University of Connecticut and served as a lieutenant colonel in the U.S. Air Force Reserve.
	Wouter van Grootheest Chief Financial Officer	<ul style="list-style-type: none"> • Wouter van Grootheest has more than 15 years' experience in Financial Management in the IT industry. His knowledge of key business drivers in the sector as well as financial operations in change-intensive environments have driven profitable growth and efficient business processes in several international corporations. • Before joining Cordys, Wouter's experience includes functions as Corporate Concern Controller at Exact Holding NV, Finance Director for Infor Global Solutions, Finance Director for SSA Global technologies and Finance Director at Baan Company. • Wouter holds a master's degree in Business Economics from the University of Groningen.
	Jan Baan Founder & Chairman	<ul style="list-style-type: none"> • Jan Baan is the driving force behind the vision of Cordys and a proven entrepreneur and philanthropist and founder of Baan Company. • With the development of his first software package in 1978, Jan pioneered what was to become the ERP industry and created one of the fastest growing software companies in the world. • Jan was also instrumental in the successes of WebEx and Top Tier as early investor and advisor.
	Theodoor van Donge Chief Technology Officer	<ul style="list-style-type: none"> • Theodoor van Donge possesses more than 25 years of IT innovation and leadership in the software sector. Together with Jan Baan, in Baan Company, Theodoor is recognized for pioneering disruptive technologies focused on process innovation. • Theodoor is the key architect behind Cordys Business Operations Platform and is responsible for the company's technology architecture and software development.
	Hans de Visser Chief Strategy Officer	<ul style="list-style-type: none"> • Hans de Visser is Cordys' Chief Strategy Officer. Hans is responsible for defining Cordys' top-level strategy as well as setting the product and solutions strategy. Hans is also in charge of analyst relations. Hans brings more than 15 years of experience in Research & Development, Sales & Delivery, Marketing and General Management functions in the software industry. • Prior to joining Cordys, Hans held various senior management positions in operations with Baan Company. He started his career in the SAP consulting business. • Hans holds a masters' degree in business science from the Erasmus University, Rotterdam.
	Sudhir Chopade Vice President Engineering	<ul style="list-style-type: none"> • Sudhir Chopade is responsible for all aspects of software engineering including development, quality management, integration, program management, development tools, engineering services and strategic partner support. Sudhir possesses over 17 years of experience in software and engineering companies. • Before joining Cordys, Sathir worked in Consultant, Solution Architect and business development manager roles at Baan Company and Infor, and most recently was Cost Controller at Rolls Royce. • Sudhir holds an Executive MBA from the Rotterdam School of Management and a Master of Engineering from the University of Mumbai.
	Bob Schindelar V.P. Services & Cloud Operations	<ul style="list-style-type: none"> • Bob Schindelar is responsible for the delivery of high quality, consistent services, and Cloud operations for Cordys. Bob brings more than 25 years of Services and Operations management to the position. • Prior to joining Cordys, Bob held senior management positions with Advizex, Renaissance Worldwide and Digital Equipment Corporation, improving quality and customer satisfaction while increasing services revenue. Bob also has started several services and consulting companies. Bob holds an MBA from Northeastern University and a degree in Mechanical Engineering from Marquette University.
	Don Drury Vice President Field Enablement	<ul style="list-style-type: none"> • Don Drury has spent his career working with enterprise software and services organizations, with roots in the early MRP/ERP markets. After ten years as a user of these systems at companies along Boston's 128 technology corridor, he transitioned in 1989 to the software provider side of the business, where he has held leadership roles in Sales Enablement, Product Marketing, Sales Consulting, and Operations. • Don's career has included working with Xerox Computer Services, Baan Company, Kronos Incorporated and Copley Consulting, an Infor channel partner, prior to joining Cordys.

Global Customer Base Cordys in Industry Verticals

<p>Communi- cations & Media</p>	
<p>Banking & Financial Services</p>	
<p>Insurance</p>	
<p>Energy & Utilities</p>	
<p>Manufacturing & Logistics</p>	
<p>Government & Public</p>	

Enterprise Service Bus (ESB)

We saw how Cordys BOP brought Business and IT into alignment for the first time in IT history. In this section, I would like to shed some light on the technology behind the business operations platform. Some of that goes back as far as the 1998 Baan Company users conference in Denver.

To keep our focus on long-term research, I had created a small team of the best technical experts headed by Theodoor van Donge. It was their task to look at what should succeed 4-GL. This was known as object-oriented software development. Unfortunately, this team could not withstand the pressure caused by Baan's acquisition strategy and the short-term objectives from a company listed on the stock exchange.

As described earlier, the agreement with Baan Company allowed me to transfer Theodoor and his team to Vanenburg Group and start building an ESB between BAAN-IV and TopTier's product. Baan Company would thus be the first in the market to have equipped its ERP product with XML web services. Moreover, the TopTier portal was expected to be the market leader in the mid-segment. Baan took receipt of the first version of the integration bus and called it Baan Bus. This became the basis of the 'Baan Open World' product. In fact, this is where Theodoor started to build the Cordys platform from scratch.

After the partnership between TopTier and SAP, the role of the TopTier staff and their technology became so critical for SAP that they ended up buying the company in 2001.

OEM contract Fujitsu

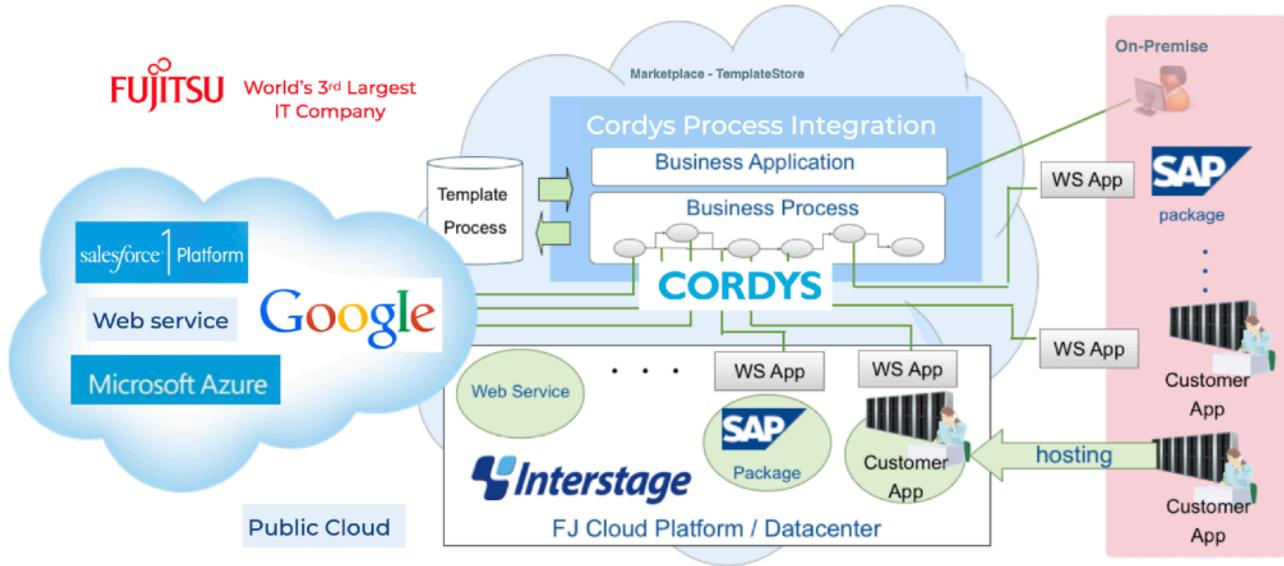
Another customer from whom we learned a lot and improved our product was the Japanese IT giant Fujitsu, the 3rd largest IT player globally. They signed a big OEM contract, our biggest deal in Cordys, and challenged us to raise our game on quality. In Japan, we made a nice deal, where Fujitsu put \$10 million on the table for this.

Fujitsu had a competitive product, but it was not suitable for the cloud. We came out of the selection as the winner. In particular, Cordys Process Factory as a 'high productivity platform' for building Mashup Applications (MashApps) appealed to them.

The Japanese culture is very detail-oriented — with a focus on quality and adherence to timelines. They have helped us to focus our R&D organization on quality and continuous improvement. In the ranking of IDC, we see Fujitsu as a minor player ranked in this picture near IBM WebSphere. In this schedule, we are the most innovative BPM player ranked by IDC.

Because of this OEM deal, Fujitsu could use all our technology. So this \$ 10 million is only a shine of the acquisition costs we have paid for our intellectual property in recent years. But this cash injection came in handy at the time, as well as that gave a reputation to the analysts. So about an equal part, which I explained in part one of my autobiography, last century with our OEM deal with ASK so that we could arrange, fairly afterward this OEM deal, a attractive participation with General Atlantic Partners, a leading venture capital firm at the American east coast.

Fujitsu OEMs Cordys in its Global PaaS Offering



Our original idea was to integrate the Cordys Process Factory (CPF) with webEx, with whom we worked closely together as one of the largest shareholders. This process would have had a positive influence on the functionality that we had realized in CPF.

Valeo was our most important customer in which CPF formed the basis for the replacement of 6,000 Lotus Notes applications. Fujitsu was very impressed by CPF, and this was an important basis for our largest OEM contract. WebEx was sold to Cisco, and the integration of CPF with WebEx got no attention. Soon after, the CPF team moved to Vanenburg to rebuild smart process apps with our previous experiences.

The picture above shows Cordys being assigned an important role in Fujitsu's Interstage platform. The integration with SAP on-premise systems, directly with Cordys BPM, is essential here. In addition, the importance of the porting with Google Cloud Platform (GCP), in which Cordys Process Factory mainly fulfilled a core component.

- Cordys Cloud Provisioning: Supports provisioning of new tenants, as well as metering and monitoring of cloud services and systems resources
- Cordys Process Factory: a high productivity-oriented cloud-based platform to re-engineer business processes and create process-centric applications (called MashApps)

“Fujitsu is strategically investing in cloud computing and with the ambition of becoming the leading provider of Infrastructure-as-a-Service and Platform-as-a-Service offerings. Cordys technology will help us add value to our PaaS offerings and they will fulfil the needs of our customers for value-added services beyond the level of infrastructure.”

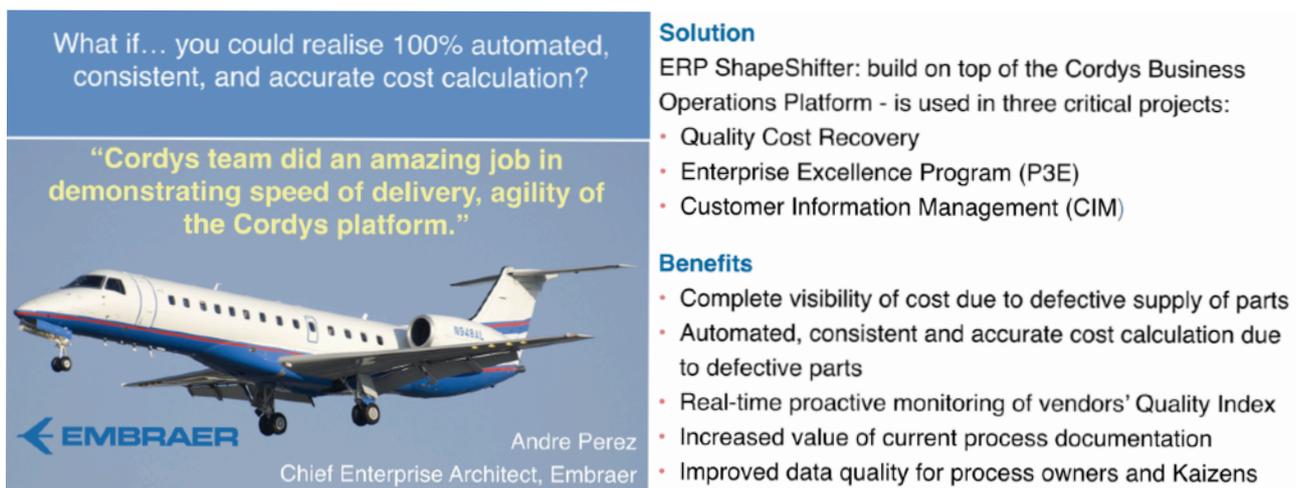
Chiseki Sagawa, President Platform Strategy Planning, Fujitsu

The solution that we have built for Embraer

After we were able to orchestrate the internal business processes from the legacy systems with the Cordys platform, we focused much more on the collaborative processes. Case management, in particular, solved the limitation of transactional processes, which could deal with dynamic, unpredictable situations that cannot be captured in logic.

A notable example was the solution that we built for Embraer, the aircraft manufacturer in Brazil. The Airplane on the Ground (AOG) process is crucial in Aerospace. At Boeing, we have never been able to arrange this properly with the Baan-ERP application. At Embraer, we came to be known as one of the toppers in the field of lean processes. They were stuck with the combination of SAP and Siebel for their AOG service. While production focuses on efficiency and cheap purchasing, the emphasis at AOG is on agility because the costs per failure on one aircraft can rise to US \$5,000 per hour. Then the time factor is much more important, in which information must be exchanged in close cooperation with other suppliers and integrations with social internet sites, such as Google Maps.

In 2009, Embraer started implementing significant process and organizational changes designed to improve efficiency, provide greater transparency for management decision-making, and enable service improvements in key areas. Soon, it became clear that each proposed change would require significant engineering work at the core SAP level, which would be time-consuming and costly. To leverage their investment in ERP while increasing flexibility and agility, Embraer selected the ERP ShapeShifter solution from CSC, built on top of the Cordys Business Operations Platform (BOP). Cordys helped Embraer to achieve



What if... you could realise 100% automated, consistent, and accurate cost calculation?

“Cordys team did an amazing job in demonstrating speed of delivery, agility of the Cordys platform.”

 **EMBRAER**

Andre Perez
Chief Enterprise Architect, Embraer

Solution
ERP ShapeShifter: build on top of the Cordys Business Operations Platform - is used in three critical projects:

- Quality Cost Recovery
- Enterprise Excellence Program (P3E)
- Customer Information Management (CIM)

Benefits

- Complete visibility of cost due to defective supply of parts
- Automated, consistent and accurate cost calculation due to defective parts
- Real-time proactive monitoring of vendors' Quality Index
- Increased value of current process documentation
- Improved data quality for process owners and Kaizens

Embraer with 17.000 employees, reduced the IT maintenance ratio from 70/30. To 50/50

business efficiency improvements while still successfully managing the core underlying technology issues.

Embraer was trying to achieve an AOG solution with SAP ERP and Siebel CRM. This was difficult to realize because of the rigid structure of the transactional systems; the AOG business process is case-driven. The Cordys application was integrated with SAP and replaced the Siebel solution. The Cordys solution improved quality with consistent, standardized processes across multiple systems and an enhanced user experience.

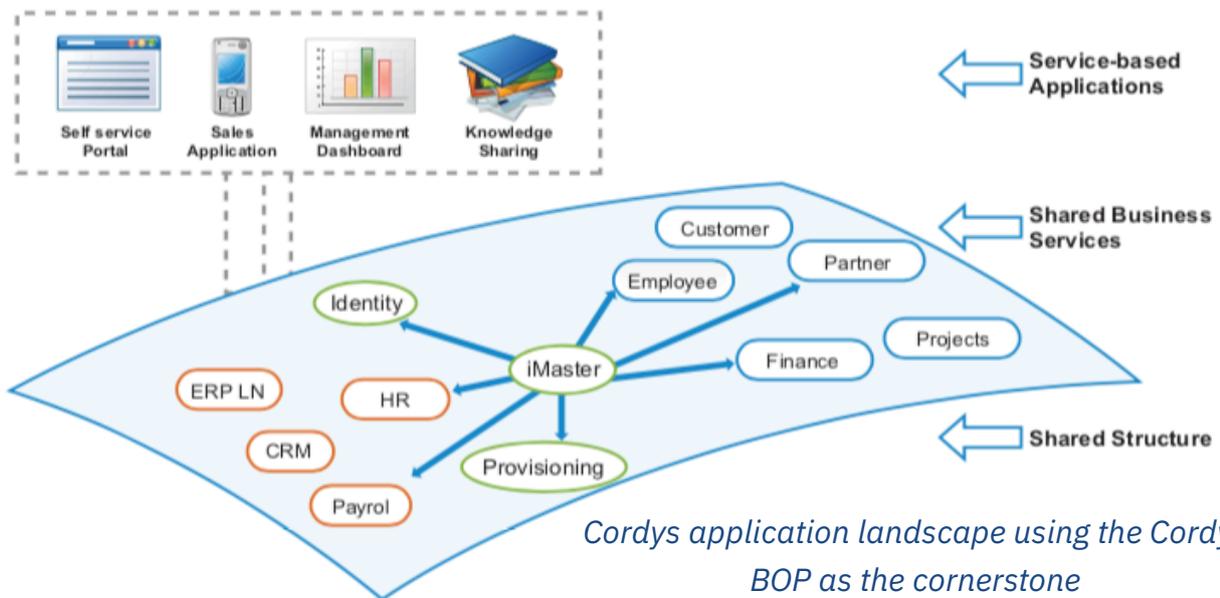
Embraer now had real-time proactive monitoring of vendors' quality index, which helped reduce potential costs and delays in the assembly. Embraer had enough confidence after implementing the Cordys platform to discontinue the SAP maintenance contract that had cost them millions. By cleverly orchestrating this in the Cordys platform, Embraer reduced its dependence on SAP and Siebel and thus saved many millions of dollars annually on the previously expensive maintenance contracts.

Transaction-driven systems

Systems from the first layer, such as Baan or SAP, are built from a transaction-driven approach. It remains extremely difficult to resolve a dynamic case situation with legacy systems where experts can circumvent the rigid generic processes for customer-specific solutions or unexpected actions. For example, claim-management or maintenance problems with a scanner in a hospital. The damage can cause tens of thousands of dollars per day. However, a flexible solution to these problems within an end-to-end process cannot be solved via an ERP application but can now be resolved in an elegant way using Dynamic Case Management from the BPM layer.

I have seen impressive results here with this innovative approach at Embraer. Their market-to-order processes in SAP with their order-to-cash.

- *'During 2009, Cordys has helped Embraer achieve business efficiency improvements while still successfully managing the core underlying technology issues. The Cordys solution has improved quality with consistent, standardized processes across multiple systems and an enhanced user experience.'*
- *Embraer now has time proactive monitoring of vendors' quality index that helps them reduce potential cost and delays in the assembly.'*
- *'Our ratio of IT maintenance cost to innovative projects, which formerly was 70/30, is 50/50. And we envision opportunities to go even further than that, putting even more money into innovation, reversing the original ratio to 30/70'. (CRM) processes in Siebel were unable to solve an AOG process and link them to Google Maps.'*

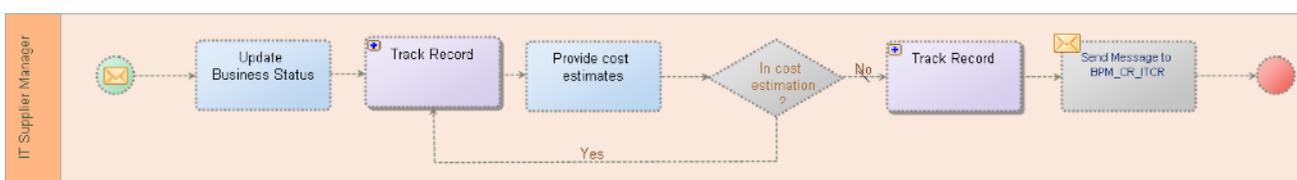


- *Despite the many customizations, these two systems still functioned as two separate silos, with much duplication of the individual processes for one common customer.*
- *With our Dynamic Case Modeling within Cordys BPM, we could easily solve this problem for Embraer.'*

*Alexandre Baulé
(recognized by Information Week as 2013 Executive of the Year)*

Customer case study: Siemens Healthcare

Another customer where we added value, was Siemens Healthcare. As a large industrial player, Siemens had major problems handling their spare parts, and in the short term, we were able to solve their problem with Cordys with their lacked integration with back-end solutions Like Sap, Oracle, and Infor.



Well-structured Change Management Process reduces failures and accelerates change requests dramatically

Solution

Automation of key logistics processes with strong integration to (SAP and IBM Rational) back ends, using Cordys Business Operations Platform:

- **Spare parts execution:** If the delivery of a spare part is not expected to be in time, this process is used to speed up delivery.

- **Enhanced productivity services:** Aims to prevent a system failure before it occurs. It helps you to increase your systems' uptime and efficiency based on remote connections
- **Change request management:** Process to support creation, approval, release, execution, and testing of change requests (IT and non-IT)

The benefit for Siemens Healthcare company:

- 97% of all spare parts are delivered within 24 hours!
- Spare parts execution: Faster reaction times; improved data quality; complex process management over several organizations; improved customer information on each escalation.
- Enhanced productivity services: Increased efficiency (11 hand-offs instead of 77 hand-offs and 30 days delivery time instead of 60 days); Increased service sales (better support); increased customer satisfaction; lower IT Costs.
- Change request management: Increased transparency; reduced failures; shorter cycle times.

This project won the **Process Solution Award 2010** for 'innovative and exemplary process management project' in the area of Customer Service Management.

'The Cordys platform allows us to continuously monitor and improve these processes across more than 125 countries and increase the level of satisfaction of our customers.'

**Dr. Frank Debus, Senior Vice President
Customer Services Material Logistics,
Siemens Healthcare**

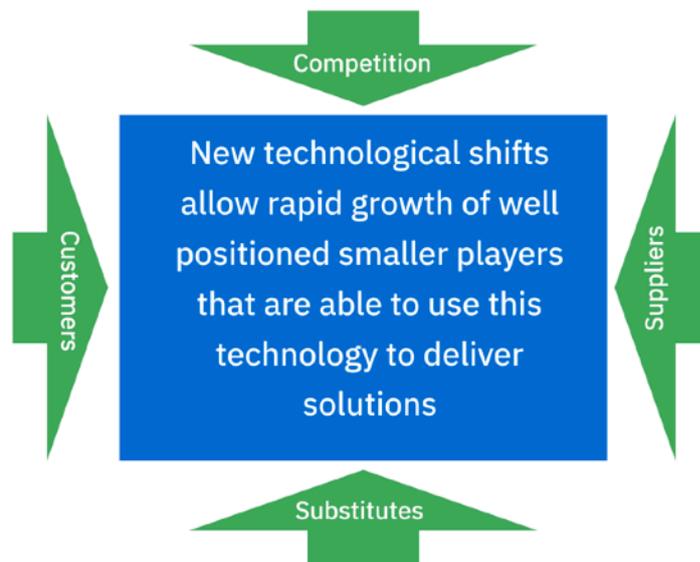


Analysts

Software market attractiveness

The industry analysts expected that the high barriers (bullets below) and the existence of more prominent players would drive a market consolidation.

- **Competition:** The entry for software vendors requires a significant investment, as it will take about (1.200+ man-years) and 3-5 years lead time to develop an SOA platform suite. It will be difficult for service providers to spool up a model that competes on the same global scale and available human capital that the major software players and system integrators can offer.



- **Customers:** Cost-cutting through consolidation and outsourcing. Users are driving greater customization in services and products, and customers are becoming 'smarter.
- **Substitutes:** Once the software is installed, the switching cost will be very high. Large customers opt for best-of-breed solutions, while the mid-market prefers a fully integrated platform suite.
- **Suppliers:** Microsoft, Oracle, and IBM were the key database suppliers, but the entry of Open source technology shifted the market significantly. Revenue was shifted to new emerging technologies.

How to become a leader?

SOA technologies were adopted by mainstream enterprises, which were not interested in technology for technology's sake, but wished to find solutions to business problems. Therefore, vendors needed to have a solution-oriented/vertical-focused value proposition. Enormous efficiency improvements were made when emerging technologies for SOA were coming together in a single architecture, like combining the transaction data stream with a case management-driven stream. To win, we as Cordys needed to significantly deliver advantages in time to market and cost savings, developing value propositions on the business issues to solve.

As initial purchase sizes were decreasing, we focused on more phased approaches. Customers bought small and incremental solutions, and a land- & expand strategy was used to gain a more significant foothold. By leveraging this business model with ISV's, the vendors will broaden the install base and solution footprints. Therefore, it was important to work closely with strategic alliances to capture enterprise attention and market coverage.

View industry analyst on Cordys 2010 - 2011

Single model for business and IT

- Shared context for optimized communication
- Meet business demands more effectively

"...single product shared environment and a single shared Process model for business and IT"



Support for all process patterns

- Support for hybrid business processes
- Design and execute knowledge intensive non-sequel processes

"...Strength: New generation (...)BPMS"

FORRESTER

Platform as a Service for the Cloud

- Open Ws-based, SaaS-based, multi-tenant, multi-level platform
- High performance. high available. scalable architecture

"...leading vendor in SaaS-Enabled Application Platforms"

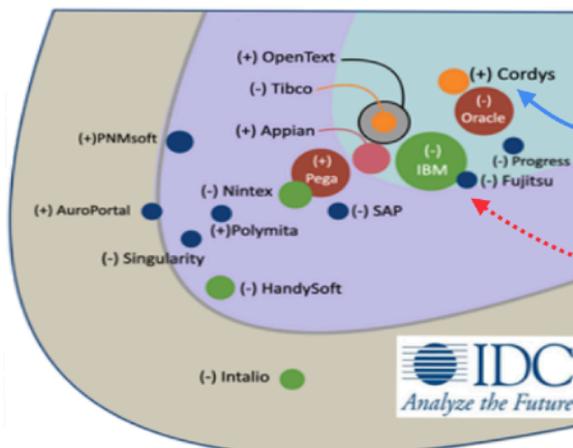
Gartner

Single platform

- Easy to implement, delivering fast results
- Increased productivity, faster time to market

"...single product (...); leading to lower cost of ownership"

Bruce Silver, independent BPM analyst



In the BPM space IDC in 2011 ranked the Cordys Business Operating Platform as the leader. BPM appears ideally suited for building integrated processes.

\$10 mio OEM deal with Fujitsu for hosting Cordys to offer customers the capability to mashup business processes between various cloud and legacy systems.



"It will take 5 years before Microsoft Azure will have what Cordys has today"



Massimo Pezzini - VP & Gartner Fellow Milan Italy

Gartner

FORRESTER

Cordys versus Tibco: Stefan Ried from Forrester (Sept 17, 2010)

- The Tibco Offering is something totally different than Cordys. While Cordys Process Factory (CPF) can be used by business users, Tibco Silver is purely for developer. Cordys is much ahead here.
- Tibco in general remains a highly technical platforms for engineers.
- It is not as easy as Cordys CPF looks like.
- Cordys was from the beginning homogeneous, but lacking number of customers, which is the down side of a build versus M&A strategy.

"Due to Azure's scalability problems Cordys BOP can deliver the alternative"



Cordys is much ahead due "to one-stack-approach" and "Cloud provisioning"

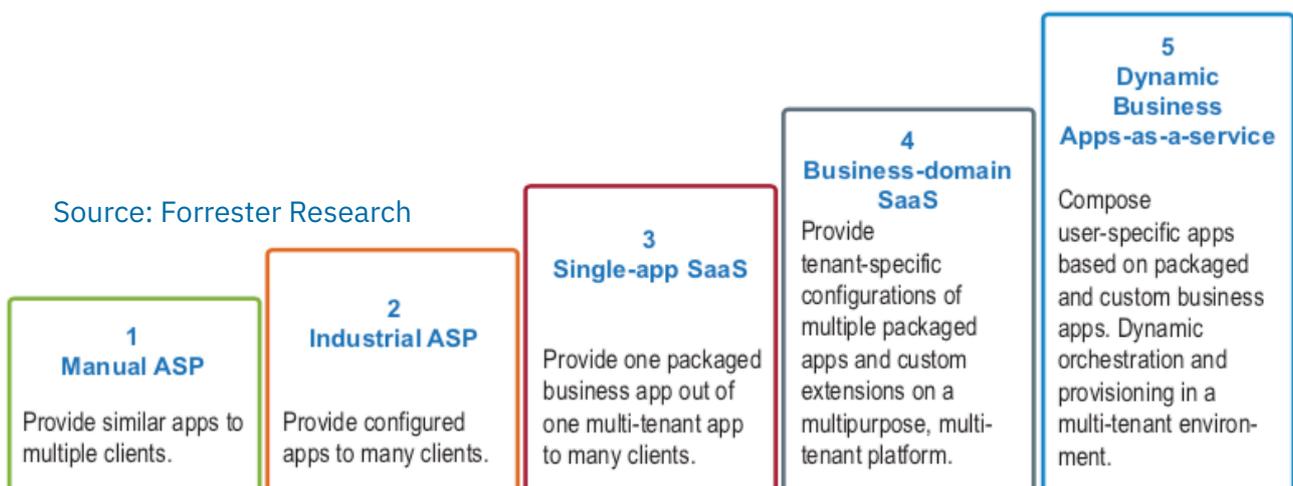
Cloud orchestration is changing the middleware market

In February 2010, Forrester reported that Cordys has a leading position among the emerging vendors providing cloud orchestration. According to the Forrester report: ‘The middleware software market went through a sequence of paradigm changes in the past three decades. An overview of the middleware software market must look beyond the various subcategories of middleware, such as Complex Event Processing (CEP) or BPM. cloud orchestration is the latest challenge for middleware software. Cordys is leading a set of emerging vendors providing cloud orchestration. Vendors like Cordys complement these scenarios with business process modeling and execution capabilities.’

Cloud building momentum

According to Forrester Research in 2011, the PaaS (Platform-as-a-Service) market was now starting to break through: ISVs were using this to make their legacy products suitable for the cloud. The Business Process Outsourcing (BPO) market will also use these developments for significant savings. Over time, on-premise solutions will be mostly outsourced to professional BPO suppliers.

Forrester’s ‘SaaS Maturity Model’ report mentioned five stages. The last two stages are the second-generation SaaS integrated business apps on a multipurpose platform. With the capabilities of Cordys BOP, we perfectly meet the service characteristics as described by Forrester in stage five (Dynamic Business Apps), which puts us ahead of many existing alternatives.



Forrester classifies the SaaS market into five stages.

Cordys is ideally suited for the 5th stage

Achieving operational excellence

The further the business process or my task shifts downstream to the execution phase (think of a contract or payment), the more valuable the sensitivity of my data becomes. Particularly with the improved personal identification and above-mentioned disconnected personal data, major improvements can still be made in my data privacy. This will also become a very strong tool for cyber security in the fight against criminal attacks.

The proceeds of the WebEx shares, which Vanenburg Group sold over several years, and the liquidity of the Baan shares meant that there was plenty of financial room to develop our ideas. Many of these ideas were already signed off within Baan Company in previous years but did not get a chance to be implemented.

Expert developers had spontaneously resigned from Baan Company because, after the acquisition, they no longer recognized the innovative Baan culture.

We used their knowledge and experience to create solutions to help the knowledge workers with their daily tasks, with apps outside of their ERP system.

Argonaut steps in

In 2006 we achieved a small revenue of a few million euro, but the R&D costs amounted to a multiple of this, resulting in a negative EBITDA of around thirty million Euros. In 2007, the American private equity firm Argonaut seemed interested in our technology and wanted to invest. This brought in some sixty million dollars. Argonaut became a 30% shareholder. This investment was also meant to make the Cordys Business Operations Platform complete and in one-stack suitable for the market.

In the meantime, we grew reasonably internationally, especially among large companies. In 2008 our revenue was around € 25 million, but the costs had risen, mainly sales costs for setting up the international organization. We then intervened heavily and continued to cut costs considerably in 2009, while sales continued to grow slightly, and as a result, the negative EBITDA was limited to around € 13 million. This was necessary because the break-even point had to be reached soon. After all, the liquidity dropped sharply. In 2010, this was only partially successful, and the increase in revenue was primarily international. For 2011, a positive cash flow plan was on the table for the first time, but more than € 10 million had to be invested in summer 2010.

My liquidity was limited because we also had our charity obligations through the Oikonomos foundation. Argonaut had stipulated in our investment contract in 2007 a subordination of Vanenburg Group's historical investments in Cordys and an annoying condition of a liquidation preference, which was very bad for us. With any sale of Cordys at

that moment (which was entirely possible), all proceeds would go to Argonaut first and then to us. Summer 2010 Argonaut wanted to put the necessary € 10 million on the table, but this would mean more dilution for us. We would be losing the majority stake in Cordys. Because of the financial crisis, the banks were no longer willing to lend us money (despite our good guarantees with Kasteel De Vanenburg). I then found a good business friend willing to lend us this amount against solid security at our real estate, which prevented us from losing our majority stake in Cordys. Vanenburg Group maintained his 70% stake in Cordys.

At that time, it looked to be the right decision for Vanenburg Group to attract this loan and invest this money in Cordys. After losing the majority stake, I was worried that Argonaut would immediately sell the Cordys company against every reasonable price. At that time, my expectation of the value of Cordys at a possible ROI moment in the future was much higher than Argonaut's view was. In retrospect, however, we should never have done this, and Argonaut should have been given the desired place in the driver seat with a 51% stake in Cordys.

Provisioning

The PaaS delivery model created new application usage patterns. Users may add applications and services on the fly, new PaaS consumers (tenants) may join or leave daily, and customers are billed per usage. To address the requirements of these usage scenarios, Cordys provided the cloud provisioning framework. This enabled dynamic provisioning of applications and rapid onboarding of tenants; managed the relationships between applications, the concept of self-service was fundamental to the cloud Provisioning Framework.

With Cordys, no direct contact was necessary between the cloud service provider and the administrators of each tenant. Cordys enabled delegation of administrative responsibilities from the SaaS provider to the tenant itself by providing tenants with complete control over the provisioning aspects of the platform.

- Administrators have a self-service dashboard to manage users and roles, manage subscriptions to applications for the tenant, view metering data and inspect provisioning problems.
- End-users have a self-service dashboard to manage their profile as well as their application subscriptions

What else can we say?

The Cordys BOP was a comprehensive offering encompassing business process design, execution, integration, monitoring, and improvement. It was designed to help business

managers directly align business process implementations with business goals while facilitating process improvement via unparalleled control and visibility into process metrics and real-time business activity. At the same time, Cordys helped IT managers and developers rapidly model and integrate their entire enterprise business process landscape while ensuring that existing IT assets are fully leveraged.

On top of these robust capabilities, Cordys provided a single view of the business, which could be continuously and effectively monitored via the platform's integrated Business Activity Monitoring (BAM). This level of visibility made iterative and continuous business process improvement a reality. It helped the organization reach operational excellence via analysis of non-performing processes and reduced process-related friction across the extended supply chain. Finally, Cordys enabled comprehensive process auditing, which helped decision-makers to achieve better process governance. This was necessary to comply with external and internal regulations and quality initiatives, such as SOX, Lean Six Sigma, HIPAA, or Basel II.

Last but not least, Cordys provided these highly unique capabilities on an industry-proven, highly scalable, and fault-tolerant application platform which could operate on-premise, in the Cloud, or as a hybrid solution. With Cordys, mission-critical business processes and applications were guaranteed to run without disruptions, offer end-users superior performance levels, and scale-up effectively and economically with increased demand.

6. The birth of Cordys Process Factory (CPF)

Lesson learned from webEx

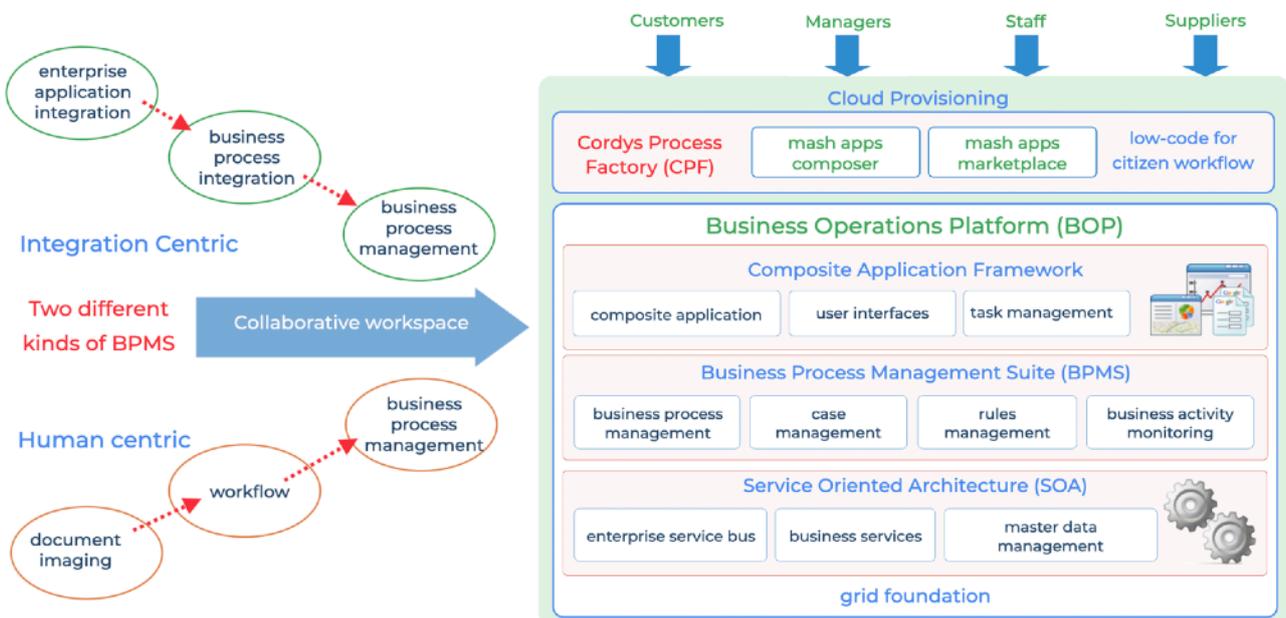
Our investment in TopTier had taught us that: ‘The browser is the only UI available everywhere, linked to XML object models.’ In the WebEx company we had a 33% interest. We set up a joint project from the Cordys Process Factory (CPF) to allow business users to compose processes in a unified browser environment. We saw web meetings here as the actual dynamic workflow processes.

Our remarkable innovation, greatly appreciated by the analyst community, was our collaborative workspace component in Cordys BOP. At the start of this century, we managed to integrate the transactional data stream of the enterprise applications into an ‘end-to-end’ business process.

But we were now also able to integrate human-centric case management processes. This was unique for a BPM company, where we could realize this in a stack. This allowed us to slow down the unfortunately necessary use of the static spreadsheet as an insulated tool through our dynamic approach to our BOP platform.

Our initiative for Cordys Process Factory went much further. Our strength with BOP used to be fixing the 'end-to-end' inbound enterprise business processes; now, we were able to start a disruptive innovation initiative for dynamic workflow processes in the supply chain, where you can think of building a marketplace. Using low-code, the citizen developer can quickly build such native cloud applications. Our focus focused on open source tools and

Cordys Process Factory (CPF): our low-code platform for the citizen user



the powerful tools of the Google Apps. This, combined with the underlying Cordys BOP tools, was an early birth in cloud solutions.

When we actually started to develop the first 'utility applications,' we discovered some of the weaknesses and limitations of a complex application development platform like Cordys. One of the major challenges we faced was the basic cloud concept of multi-tenancy, where data of one tenant should not be available to other tenants. The lack of customization features in the platform made the project even more challenging.

During that time, I connected with the people of WebEx as a major shareholder and member of the board. WebEx CEO Subrah Iyar and I did important pioneering work on the concept of collaboration. Because of this work, we got the opportunity to define a partnership to join their 'WebEx Connect' program.

Our offering was selected to bring enterprise and on-demand applications into the WebEx collaboration environment as part of the program. It was a very successful program, and WebEx was considered a serious competitor of Salesforce, the company dominating the cloud application market at that time. WebEx successfully went public on NASDAQ and later was acquired by Cisco, where it became their primary conferencing solution.

Interaction with WebEx people provided us with two critical inputs: Multi-tenant applications and Highly intuitive user interfaces. WebEx had challenged our idea of multi-tenancy and helped us better understand the limitations of separate databases being provisioned for various customers. If you have 10,000 customers, you have to maintain 10,000 databases, and you won't offer an economy of scale. Apart from this, they also challenged our user interface, which was attractive but, in their words, not good enough to engage a web user.

In about 3-months time, we came up with a new approach for multi-tenancy. It was to create a tenant-based object repository (MTOR - Multi-tenant object repository) to define tables, relationships, and indexes. We developed web services on top of this object repository to create the object and query, including the necessary capabilities. With this, we could easily manage the creation of multiple applications for various tenants who benefit from this highly scalable and responsive single repository of objects.

At the same time, we also started to rework the UI definition of our applications simply and flexibly. The result was a user interface modeler that could assemble many UI components that could work on the multi-tenant object repository we created.

The Cordys platform base capabilities were used as the engine to deliver these UI's. Similarly, we also created a simple process modeling environment that was built with the capabilities to compose processes easily.

The net result was the launch of a new application development environment, called Cordys Process Factory (CPF), in early 2008. The lightweight application development platform was available via the internet with the following characteristics:

- Creation to the deployment of an app via a single URL
- Highly intuitive user interfaces
- Rapid application development
- Application definition captured as models which can be executable
- Web services to talk to your internet applications
- Out of the box integration with Google apps Interaction with the people of WebEx provided us with critical inputs

Key ingredients:

- Easy-to-use online composer for creation of user interfaces (incl. mobile forms designer), application object, processes, rules, web-services, and reports
- Online marketplace

Usage scenarios:

- Fast creation of web-based Mashup Applications (MashApps®)
- Deploy ready-to-use MashApps from MashApps Marketplace
- White-label Cordys Process Factory fulfilled the demand for Platform as a Service (PaaS) and Software as a Service (SaaS)



Deployment:

- Public Cloud
- Private cloud – only for white-labeling

Cordys Process Factory: embracing the consumerization of IT

The world of BPM is very dynamic; new technologies and ways of working are fuelling the uptake of this approach. Growing acceptance of the technology is changing the expectations of the end-users. The user is in the driver's seat and, as a result, will no

longer accept the seemingly artificial constraints placed on them by the more traditional software vendors. Probably the most significant development over the past couple of years that encourages this new approach is what is termed 'social networks'.

Users ask themselves: 'why is it easier for me to do this at home than at work?'

As we have stated before, the entire field of computing is rapidly becoming a collection of services accessible from anywhere and detached from the underlying hardware. It's possible that what we are seeing could have a greater impact on the business use of IT than the PC revolution did in the 1980s. The flexibility and potential cost savings of using applications in the cloud accessed via the web is likely to fuel adoption across the board.

There are practical examples of where this is already happening. We all know that the average user uses web-based applications such as Salesforce.com, independently of the corporate IT department. This puts increased pressure on IT management to look at such technologies and determine how they can best be used within the enterprise. This means that it is becoming increasingly difficult to maintain the fortress approach of keeping all IT within the confines of the corporate network. Corporate IT cannot continue to resist the wave of change that dramatically affects the way we live.

So, the way applications are developed and deployed needs to change. Users expect maximum flexibility, reliability, and choice. The need to have available applications that can be used to meet a specific business situation are applications that we now call Situational Applications (SAs). But what are they, and how do they get built?

According to IBM, the situational application is a term used to describe applications built to address a particular situation, problem, or challenge. This means that the old way of following a formal development lifecycle is redundant. SA development is quite different from the traditional IT-developed monolithic applications. The Cordys name for situational applications was MashApps®. MashApps are usually built by power users using short, iterative development life cycles measured in days or weeks, not months or years. As the requirements change, the MashApp often continues to evolve to accommodate these changes. Significant changes in requirements may lead to an abandonment of the used application altogether.

In some cases, it is easier to develop a new one than to update the one in use. The downside is that the development is, more often than not, performed in isolation of the corporate needs and may run counter to corporate governance, standards, and compliance issues. It, therefore, can be of limited value in the longer term.



Cordys bridges the gap between the on-premise World and the Cloud

So, users need the flexibility provided by MashApps and web 2.0 technology, but they need it with built-in corporate controls and well-defined and controlled process frameworks. To enable this, Cordys developed the Cordys Process Factory.

Cordys Process Factory was a hosted development environment for building process-based situational applications in the Cloud. Based on a Platform-as-a-Service, this process orchestration solution helped companies to build MashApps to meet specific business needs rapidly instantly. With the advent of web 2.0, businesses realized that collaboration in the execution of business processes is key. They also saw that the notion of a process always moving along a ‘happy path’ is flawed, and this had sparked a real interest in what many call ‘case management’.

Collaboration tools for social enterprise network

- Enterprise apps functioned in the context of a social enterprise network
- The enterprise network connected employees and partners
- Information exchange happened like in social networks (feeds, sharing, like, follow)
- Conversation history was maintained for all involved parties.
- Easy to share information
- Enterprise apps & workflow were integrated into this collaborative environment.
- Groups, partners, relationships, etc. bringing people together for a purpose
- Tasks performed in a collaborative environment with inputs and conversations with other members

New capabilities which in its own way creates a game changer

Cordys is the latest company from Dutch software entrepreneur Jan Baan, **who seems to have been in the right place at the right time for each new wave of technology or capabilities.** The announcement was made under the title of 'Cordys enables business process automation for Google Apps' and once again it takes some digging around to really get to understand what is a most interesting new capability.

Cordys Process Factory provides the capabilities to build workflow over Google Apps, thus opening up a whole range of new possibilities. Not only that, but require anything to be installed at the users site. This opens up the possibility that as far as I can tell it could also support intra company workflow too.



MashApps with Cordys Process Factory

Even though we had back-end systems like the ERP and ran our business processes with Cordys Business Operation Platform on-premise, we sometimes did find gaps in functionality. This was apparent particularly when we were required to provide access to users outside our premise, such as for our partners and remote/international employees. Cordys Process Factory fulfilled this need with MashApps in the cloud, accessible from anywhere and anytime. Some examples:

- 1. Purchase Orders:** Different Cordys suppliers (like HP and IBM for IT needs or others for corporate needs) accessed our MashApps to submit their quotations and integrated with Google spreadsheets. The approved vendors and their associated quotations would then be transferred to our ERP back-end system for further processing.
- 2. Expense Management:** Cordys employees were located across the world and worked on different projects. They were able to submit, claim and approve expenses anywhere at any time. The expense claims were automatically stored in our ERP system, making it easy to close our books at the end of the month.
- 3. Contact Management:** Cordys derived its contact information from various sources like websites and CRM systems. In situations where information needs to be sent to all contacts, many issues related to consolidation and sending selective information arise. Cordys Contact Management was a MashApp that collates all this information and presents

it in a Dashboard view to the intended audience. The data from various sources was pushed to MashApps either on demand or at regular intervals using the MDM tool. Other MashApps used internally were Leave Management and Hours Accounting.

On-premise and cloud – breaking barriers

Cordys had a mix-and-match of on-premise and cloud MashApps, and it was essential to have secure integration between them. The application landscape provided composite data service to the internet cloud in a secure way using BOP's standard protocol. The MashApps built in the Cordys Process Factory (CPF) used these composite services to consume or push data back and forth to the core system. This bridged the gap in communication between on-premise and on-the-Cloud applications.

Cordys/Google cloud platform

Shortly after the public launch of the Cordys Process Factory (CPF) platform, Cordys became a Google enterprise partner. This partnership enabled Google users to create workflow apps on top of Google enterprise (also known as Google Apps) and other cloud-based services. Cordys Process Factory ran independently from Google, but together CPF and Google Enterprise formed a way of putting office apps in the cloud. Cordys Process Factory (CPF) became the killer solution for Lotus Notes replacement with Google Apps through this partnership. It became a perfect entry to the Platform as a Service (PaaS) market, already getting established with players like Salesforce, RunMyProcess, Long Jump, and Zoho.

Our most notable example of this is Valeo in France. Valeo ranks among the world's top automotive suppliers and is an independent industrial group entirely focused on designing, producing, and selling components, integrated systems, and modules for the automotive industry. They reviewed the market, and after a very competitive proof of concept, they chose Cordys Process Factory.

7. Cordys acquired by OpenText

Preparation for IPO?

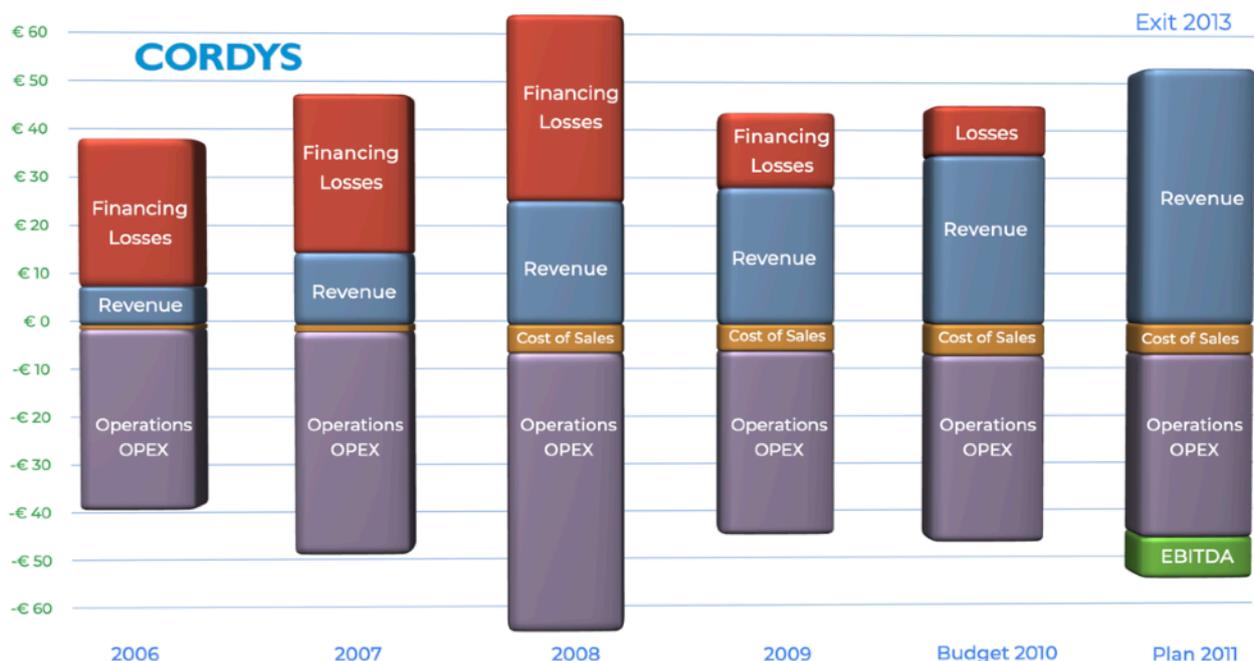
Merrill Lynch / Bank of America was interested in guiding us to go public. With these bankers we started the process to produce an IPO prospectus. They were impressed by the experiences of our management team, as well as our customer base worldwide

Acquisition by OpenText

Meanwhile, with Cordys, we achieved a high ranking from the analysts Gartner and Forrester. We were seen as the number two SaaS platform player after Salesforce. Beyond the big giants like IBM, Microsoft, and SAP, Cordys had also realized an excellent worldwide customer base with large international companies over the past years. However, we still lacked the critical mass to realize a breakthrough internationally. For a long time, I had the conviction that we had a CEO vacancy, especially given our dramatically poor expansion in the US, where we had not realized our sales targets for several years. Our American headhunter arrived in 2011 with a top-level American CEO, who was really interested in this challenge. Since we had a proven product, we were able to win many worldwide ‘lighthouse accounts.’ After the major OEM deal with Fujitsu in Japan, which placed € 10 million on the table, we decided to use this amount to focus on the USA. We invested much money to achieve a breakthrough in the United States from that moment on. This initiative turned out to be an absolute disaster, which cost us a lot of money and also caused a considerable dilution of my shares.

Innovate or Perish: From Investment to Harvest ??

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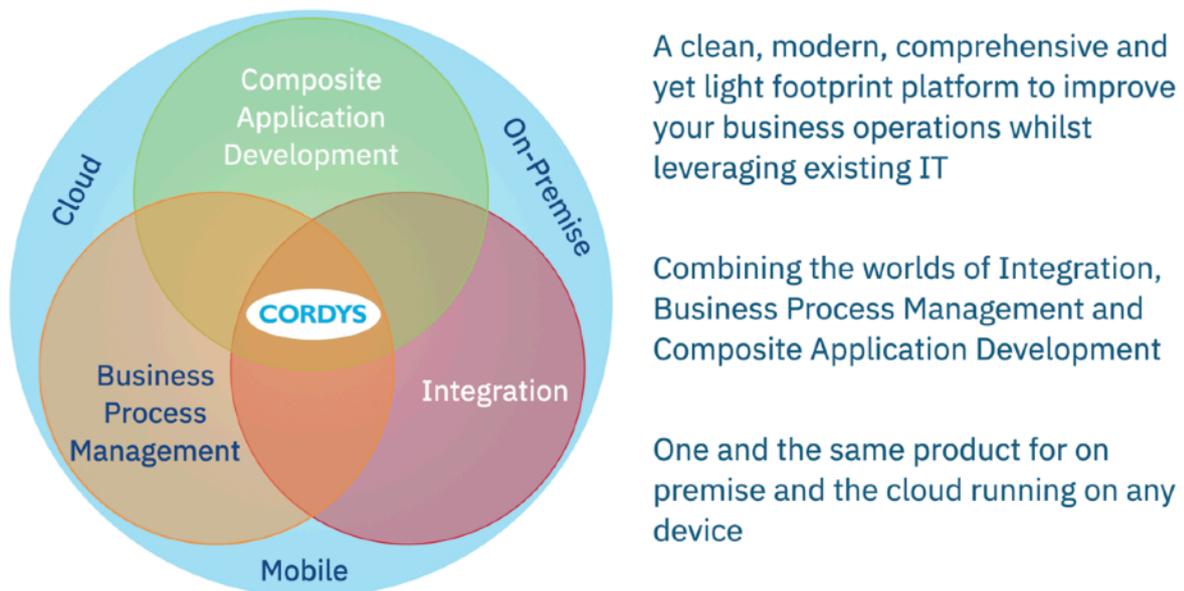


<p>High Profitable Growth with Multiple Levers for Further Upside</p>	<ul style="list-style-type: none"> • Cordys in one of the fastest growing software companies in the world ✓ Accelerated growth in 2010 (+29%) with licensing business up +68% • Substantial growth supported by the open architecture, cloud opportunities and 'on demand collaboration' possibilities • Expected to reach profitable by Q4 2011
<p>Strong and Recognized Product Leadership</p>	<ul style="list-style-type: none"> • Positioned as the only IT provider in the world with an integrated platform, able to offer fully integrated cloud services ✓ Unique combination of BPM and cloud technology in the Cordys platform • One of the more visionary players - strong technological advancement of Cordys recognized by many analysts • Product leadership ensured through significant R&D investments
<p>Strong Positioned in One of the Fastest Growing Markets in the ICT Industry</p>	<ul style="list-style-type: none"> • One of the leading players in the \$1.9bn market for Business Process Management suites, and \$15bn Platforms-as-a-Service (PaaS) market • The cloud market is expected to be the most extreme growing market in the next 10 years in the ICT industry ✓ Expected to grow from \$26bn in 2010 tot \$151bn in 2020, or 19% CAGR over 2010-2020 period
<p>Global and Diversified Customer Base, Combined with Long-Term Strategic Business Partnerships</p>	<ul style="list-style-type: none"> • Wide range of global customers across regions and sectors • World-renowned companies (e.g. Cisco, Fujitsu, Google) have selected Cordys as their partner in developing their own product ranges • Successfully established key partnerships with leading value-resellers, systems integrators, OEMs and ISVs, including Accenture, Atos Origin, Capgemini, CSC and Wipro
<p>Experienced Team with Proven Track Record</p>	<ul style="list-style-type: none"> • Strong team with breath of industrial and financial expertise uniquely positioned to execute • Founder Jan Baan is a proven entrepreneur and visionary leader

Losing the majority share

At the end of 2011, our CEO suddenly turned his strong sales pipeline into smoke due to a far too optimistic expectation he had issued. Again, we had to intervene, and I proposed to send this CEO home. Our venture capitalist Argonaut saw it well to give him the role to sell the company, thereby maximizing their interest.

In 2012 Vanenburg Group had lost its majority share, and both shareholders Argonaut and Vanenburg Group had an equal interest. Again, a considerable amount had to be put on the



The power of a single platform

table to finance the losses in the USA. Because my liquidity was blocked in the Vanenburg estate and my charitable obligations in the Oikonomos foundation, it was difficult to make short-term capital available. The banking crisis at that time only made matters worse since banks were not willing to provide us loans. Argonaut invested and got into the 'driver's seat'.

Argonaut immediately started actively implementing an exit strategy. At the beginning of 2013, we had an intention agreement with a South African partner for a merger. We would realize revenue of € 60 million and a positive EBITDA after consolidation. We would have had better access to the European market with a strong generic cloud Platform with this plan in place. Because of my deep personal relationship with this company, I was delighted with the agreement. The loan of Cordys with Argonaut would then be paid back, and it would allow me to continue as the largest shareholder in this new combination.

When the completion of this deal took longer than expected, Argonaut grew impatient while waiting for a return on their investment and blocked this route. They preferred to

complete a deal with OpenText for Cordys. Although it was not my choice, I decided not to oppose OpenText's offer, especially given the continuity of the company and the care for our employees. On 15 August 2013, Cordys was acquired by OpenText for an amount of € 25M. Unfortunately, due to the 'liquidation preference' clause in the investment contract with Argonaut, there were just a few million of proceeds left for Vanenburg Group in this deal since we were already heavily diluted to a minority shareholder. Thus came the painful 'end of story' moment for me as the founder of Cordys.

Entry into a safe harbor

Although the Cordys product had entered into a safe harbor after the takeover, I saw that the innovation was over. Of course, the Cordys platform was still really mature and powerful to become a leading Business Operations Platform for the next ten years.

I felt very sad, especially for my employees with whom I had a special personal bond and a warm personal relationship. Most of them have worked with us for over 10 years and saw me as their 'business-father.' But as individuals, they are mature enough to take advantage of the attractive opportunities offered in the market.

In retrospect, the nearly 15 years with Cordys were a unique experience to understand the true value of the business-IT alignment according to Gartner's model. Especially the interaction between 'Systems of record' in the 1st layer (with which we played a dominant role with Baan Company) with the second layer 'Systems of differentiation,' where Cordys was one of the first solutions to build Enterprise 'End-to-End' processes. Although the sale to OpenText was not my favorite choice, I decided to be optimistic about it. For that reason, I sent a letter to the OpenText leadership.

Letter to OpenText CEO: Mark Barrenechea

August 2013

Dear Mark,

Congratulations on the nice purchase of one of my 'business children.' I think you bought (very cheaply) an absolute Rembrandt or a Van Gogh (both top level Dutch painters). But with the most beautiful painting, much more value can be created; namely by working with the painter.

My Cordys platform is by far the best R&D creation of my business career (yes even stronger than Baan-ERP). So, I am still very motivated to contribute to this beautiful platform, to see that it is successfully implemented in the market.

If you need a collaboration with 'the painter' to integrate your new painting (with the result of becoming the best BPM player), I am motivated to contribute to my beautiful, innovative, 'old' platform. With my small Vanenburg Software company I could mean a lot in the slipstream of OpenText - Cordys.

I hope I can meet you soon! Kind regards, Jan Baan

I was expecting a call from Mark. But he didn't dare to call me. My vision of enriching the 'already' outdated Cordys platform was different from that of the M&A-driven company, OpenText. Ongoing innovation of purchased products has never been the goal of a merger. The focus of OpenText was on milking the installed base. Two-thirds of the R&D department was sent home—people with long service periods, some more than 25 years. Millions of investments in innovations are thrown overboard in one day. Consider our setup of VDML (Value Delivering Modeling), where the Cordys platform now connects the IT processes to the strategy in the boardroom.

But OpenText had no understanding of this future innovative wave and people like Theodoor van Donge, Henk de Man, Thijs Petter, Hans de Visser, Freerk Wieringa were immediately sent home. Moreover, people with long years of service cost a lot of money due to a good severance package, but that didn't count. After all, the restructuring costs are kept outside the P&L. The innovation thrown away is not on the balance sheet and is not understood. Then our products were only good enough for a reasonable cash generation, against the very low maintenance costs.

So, in his case, as CEO of OpenText, Mark may have made the right decision. After all, they look no further than the next quarter. I still regularly speak to my old employees at OpenText. The few Indians and Dutch people are doing OK. They are appreciated due to their professional skills. Most people do not feel at home there but have a very easy life, especially now that they know how to deal with the politics in the company.

Our slogan of 'better to ask for forgiveness than for permission' has now been reversed. As a token of appreciation, I was awarded the VSB '2013 Strategy Award' October 16, 2013 ³. Their motivation was my helmsman's skills to bring a company in trouble (Cordys) into a safe harbor, ensuring continuity, especially for the staff.

³Jan Baan, has won the Strategy Award at the Dutch VSB strategy conference. The event was hosted by the Dutch organization for strategy and management, a coalition of leading politicians, executives and researchers in the field of strategic and organizational development. The award recognizes Dutch business executives who "demonstrated outstanding strategic thinking and leadership over the past years". The judging panel considered leadership skills, industry influence, innovation and originality. Previous winners of this prestigious accolade include Jan Aalberts, former president of Aalberts Industries. The 2013 Awards were presented by Lammert de Vries, chairman of the VSB, at Kasteel De Vanenburg in Putten.

Look back at my Cordys period

Looking back, now in 2021, on these events, it is easy to discover that technological advances have gone fast in terms of innovative possibilities in the past eight years. But it is very different in the operational acceptance of these technical possibilities in the market. It is a very disappointing observation. After all, the implementation of new IT technology is going very slowly.

The advantage of burning all the ships behind you is the possibility to look ahead without legacy and dependency on an installed base. It was disappointing that we did not make it with Cordys as an independent company. It is now well under OpenText, but there is hardly any development to be observed. In the meantime, the fundamental choices for our Cordys platform, based on the technology of the end of the last century, have now become obsolete. What we have built with a lot of effort and in very complex projects with large development teams is now largely available as open source. After I departed from Cordys, I was mainly concerned with documenting the past developments, both from Baan Company and Cordys. On the one hand, I wondered what was reusable just to use the legacy products and integrate these into smart process apps.

We can now use the latest products in the market, such as Google, and rapid app development tools such as WaveMaker (a promising tool from the Indian company Pramati). Here, you will find powerful tools, but they are not yet suitable for one complete ecosystem in terms of deployment. Our deep experiences over the past almost forty years have helped us to become a strong player within the innovative ecosystems of tomorrow.

After Cordys, I took a sabbatical for a year. It was a tough time for me personally. I retired to my office for months at home. I was processing my grief about the business's past while learning a lesson from it. After all, pain is the best teacher because it motivates you to look for new solutions. Most people become frustrated. But it is important to turn these experiences into positive energy. That is the only way to come up with disruptive innovations again. It feels like a great privilege that today, I own a nice family business called Vanenburg. Yes, it is small with just over 100 employees, but our experienced development department in India has real value. Here I can combine my energy and experiences to pursue innovations in our industry actively.

- Cordys/OpenText is still strong today as process engine and comprehensive for content-centric automation and case management.
- OpenText has made good progress in rationalizing an acquisition spree for process automation vendors, landing on the Cordys platform as the process engine for its AppWorks offering.
- Companies are looking into low-code technologies to quickly launch apps for mobile/portal platforms.
 - ✓ Appian is a good example and also OutSystems, but their message is very BPM-like... and reminds me of the Cordys Process Factory - but they have framed it as 'low-code' (fast assembly of apps).

The Forrester Wave: June 19, 2019



Jasmin Young
Director, Business Model Transformation
for Cloud/SaaS Companies

8. Vanenburg's skunk works

Skunk works is a term for realizing disruptive innovative projects that do not receive attention within the existing company, to execute those outside the operational structure of the current company because the effects of the extra costs are often hardly motivated for the existing ones and too dependent on the incentives that are determined by the results in the short term.

As an entrepreneur, you are always busy with future innovations. In 2009, I decided to start a new project unrelated to Cordys. The company had, in my eyes, entered a mature phase, where the strategy was also somehow dictated by an external shareholder (venture capitalist) focused on a future exit. The vision shifted from disruptive innovations as a core activity for the long term to the matrix of 'efficiency innovations', generating revenue and profit in the short term. Investments in Cordys were focused on a global go-to-market strategy with the roll-out of our platform, mainly realized by attracting new sellers. The R&D department was in Coimbatore, in the south of India, which we called the '**Cordys Process Factory**' (CPF). The goal of CPF was to build workflow-driven apps with the use of Google's technology. Our most interesting customer, a big automotive supplier Valeo, had selected CPF to replace their 6,000 plus Lotus Notes applications.

Because the costs of those 60 developers in India were not in line with the generated short-term revenues, the Cordys board decided to stop this activity. I objected to this because we would be giving up these beautiful initiatives, and firing our long staying engineers would create big unrest in India. The consequences could become a problem for the other 200 Cordys developers in Hyderabad.

Therefore, I acquired the R&D team in Coimbatore in my private holding and started a '*Skunk Works*' project which became Vanenburg Software. By bringing the 60 experienced team members into the new company, we achieved the advantages of integrating with the existing products, to which my founder's name (at Baan Company & Cordys) is linked.

The risks of new and uncertain innovations, for Cordys as a more mature company, were avoided while these initiatives were linked within a shared ecosystem. My key role was motivating small innovative teams in the Netherlands and India. Managing 'operations excellence' in a mature company, with focus on the matrix, in combination with sustainable innovation, can be delegated much better to professional management, which does this much better than the entrepreneur.

In Vanenburg, we added a new dimension to the increasingly well-recognized Cordys platform with collaborative B2B solutions (now called Smart Process Apps). The end of the last century was the start of the breakthrough with the Cordys business operations platform to manage end-to-end business processes. In 2009 it was the new start of Smart Process Apps, with which the more workflow-related tasks improve the productivity of the knowledge worker, initiated in Vanenburg Software.

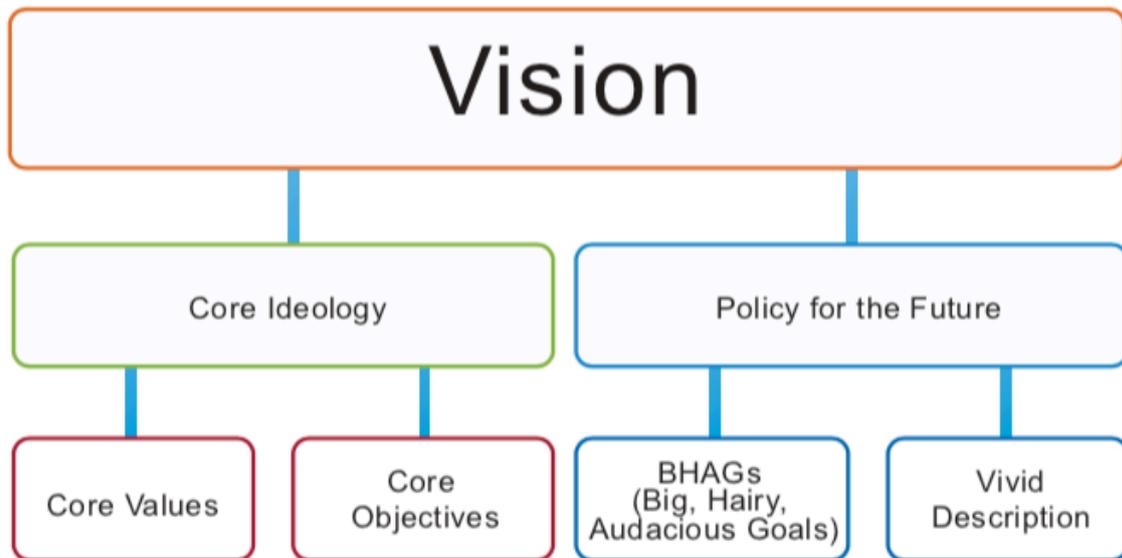
Vision, core ideology and policy for the future

Vision is an important guiding instrument to keep a company on track into the future. However, the unfortunate reality is that we usually can't follow a predetermined course — we have to respond to events as they come along. Most of the time this is what determines policy. Nevertheless, it's good to have a vision for the long term.

In my opinion, the most important input of this is the mistakes we have made in the past. After all, this is what teaches us the most. It is important that you can make mistakes and that these mistakes are then corrected by quickly responding with decisive policy. A great deal of my inspiration in this has come from Jim Collins through his fascinating book 'Good to Great.' We learned from Collins '*to fix our mistakes real fast before our competitors are able to make them*'.

According to Collins; the elements of a visionary business consist of the 'core ideology' and the 'policy for the future.' The core ideology can be subdivided into core values and core objectives. The core ideology can be seen as the part set in stone and is not subject to change. The policy for the future, on the other hand, consists of goals that are pursued plus a 'vivid description.' After all, this element is completely uncertain and cannot be explicitly defined. As I see it, the only stable factor here is 'change.'

Core ideology



A company's Vision is based on its Core Ideology and Policy for the Future

- Just like the fundamental ideals of a nation, church, or school, the core ideology of a visionary business consists of a set of fundamental rules that form a fixed benchmark: 'This is who we are; that's how we work.'
- A core ideology does not consist of empty words but a vital, designing power.
- Profitability is a necessary condition to exist and a means towards more important goals but is not a goal in itself for many visionary businesses. Profit is as oxygen, food, water, and blood for the body; that's not what life is about, but there is no life without them.

For Cordys, this meant that our focus is not limited to shareholders' value. Such a strategy would concentrate entirely on the following quarter and leave little room for long-term policy. I have learned that the name 'shareholder' could better be changed to 'share-mover.' After all, there is far more moving on Wall Street than holding.

In this regard, the ideology of Johnson & Johnson particularly appeals to me — even though it was laid down back in 1943, I think it is still very applicable, particularly in today's market:

- We believe that we are in the first place accountable to our customers with products of the highest quality, of which we strive to reduce the costs hereof, and that our distributive trade must make a fair profit.
- Those who are working for us have their own responsibility. They must have a feeling of security in their job. Wages must be reasonable and adequate, the hours sensible, the management to be just and fair, and the work environment optimal. For example, having

a system for suggestions and complaints allows promotion for those who are qualified. Each person must be seen as an individual with their own dignity and value.

- We, the management, also have our responsibility. We must have talent, training, experience, and skills and use our common sense and show compassion.
- We must be good citizens towards society and show society what we are doing.
- The last responsibility is up to the shareholders. A business must make a healthy profit, reserves must be created, and research is done. Adventurous programs will be developed, and mistakes must be paid for. Cover yourself against bad times and pay the proper tax. Invest, launch new products, and develop new sales plans.
- We must experiment with new ideas.
- If these things happen, the shareholders must receive a fair dividend. We are determined to do our duties to the best of our abilities with the help of God.

The core ideology of a visionary business goes hand in hand with an unbridled craving for progress. I believe that the continuous drive to make improvements is encoded in the DNA of every entrepreneur. For me, business is a process of ongoing improvement. This is not the kind of approach used in academic research but much more a primitive drive towards changes and dissatisfaction with the status quo, even if that status quo works fine.

Therefore, the need for progress also means ‘things can always improve; we can always go on; we can always find new opportunities.’ As Henry Ford said, ‘You have to keep on doing and going.’ A visionary business shows herewith a powerful mix of self-confidence and self-criticism. Your drive should be ‘it is never enough.’ Don’t try to be better than your contemporaries or predecessors. Try to be better than yourself. It is not the quality of the management that distinguishes visionary businesses from their counterparts. The continuity of qualitatively strong leadership matters; continuity that maintains the core.

- To be visionary has nothing to do with being soft and undisciplined. Visionary businesses are clear about what they are, what their goal is, and what they want to achieve; they have little room for people who do not want or cannot meet their high demands.
- To be a visionary, you only need old-fashioned discipline, hard work, and an instinctive aversion to self-satisfaction. Ease is not the goal of a visionary company; rather it is the desire to erase self-satisfaction and stimulate changes and improvements before the outside world asks for them.

Collins observed that a company's success strongly depends on the people who are forming a tightly knit group inside the company. Working in this environment is like joining them. Only when you fit in will you be satisfied and productive, or you should give up and walk away. By giving the ‘mind of the AND’ precedence over the ‘tyranny of the OR,’ visionary businesses impose tight ideological control and simultaneously give a large

operational autonomy that furthers personal initiative. Ideological control ensures the preservation of the core, whereas operational autonomy stimulates progress. Businesses looking for a decentralized work environment must impose a tight ideology. People must screen and indoctrinate that ideology. The viruses must be rejected, and those who remain will have the feeling of responsibility that goes with the membership of an elite organization.

Core values

The most important Cordys core value was that we had the conviction that we offer a substantial value proposition to our customers through our innovative technology.

In addition:

- Cordys wanted to be a reliable partner to all its stakeholders.
- We wanted to share our innovative approach to work with all our employees and business partners. We motivated our people to take the initiative. It is difficult to work with a 'Mother, may I?' mentality. Our slogan has long been: *'It is better to ask for forgiveness than for permission.'* Our people may make mistakes as long as they learn from them. We share innovation, we dare initiatives, but above all: we care for integrity.
- Cordys was an innovative business and acted as a pioneer. We always wanted to be at the forefront of new technology.

Cordys viewed its employees as its most important resource. They wanted to respect this in a fair remuneration, an open and instructive work environment where personal initiative is furthered, with internal career opportunities as a matter of importance. We looked upon each person as an individual with his own dignity. We wanted to turn our work into a hobby and try to slow down 'workaholics.'

Unite different cultures as a single team

- As a global company, we united different cultures in different places worldwide: Chinese, Indians, Arabs, Americans, Jews, Europeans, and Dutchmen. Every nationality had different customs, but we tried and learned to respect each other.
- Over the past thirty years, mutual respect has developed between the company's employees from different religions. We had learned to respect our colleagues despite differences in cultural aspects such as the length of our weekends, the selection of our marriage partners, and our eating habits. Our views on business ethics seemed to be very similar.

Core objective

As an innovative business,

- We always wanted to be the first in the market to deliver *open-standard* components. We changed the function of IT from ‘data-driven’ via ‘end-to-end’ business process-driven, by using today’s technology into workflow driven, which means that today *the task to be done*, which is connected with all the underlining data elements and aligning with native cloud microservices, is becoming the main differentiator to improve the companies EBITDA.
 - ✓ The internet was considered to be the carrier of our products and services. Just as Henry Ford democratized automobiles, we were democratizing the task of the knowledge workers in their supply chain, with consumerized IT devices.
- Our innovative products influenced our customers’ business processes and demanded that we achieve an advanced level of knowledge transfer. This was the key motivation behind my decision to purchase our 17th century estate Kasteel De Vanenburg and renovate it to serve as a hospitable organization for all our business partners — to share knowledge, science, and culture in a sociable setting.

Big, Hairy, Audacious Goals (BHAG)

If you think, think big. Theodore Roosevelt wrote: ‘Far better it is to dare mighty things, to win glorious triumphs, even though checkered by failure, than to take rank with those poor spirits who neither enjoy much nor suffer much because they live in the gray twilight that knows neither victory nor defeat.’ Collins describes a BHAG (Big, Hairy, Audacious Goal) as a clear and imperative goal. A BHAG involves people — it seizes hold of them. It is tangible, gives energy, and is very focused. People understand it right away; one needs little or no explanation. A BHAG helps an organization only as long as it has not yet been achieved.

Maintaining core values / stimulating progress.

The best moves have not been realized through detailed strategic planning but often via experimenting, trial and error, opportunism, and accident.

After that, what seems to be a brilliant strategy is often the result of opportunistic experiments and ‘chance sought.’ BHAGs are unambiguous goals (e.g., ‘We will climb that mountain’). The key ways to do this are

- ‘Encourage and do not be a hairsplitter. Let people develop an idea. Hire good people and leave them alone.’
- ‘If you put fences around people, you get sheep. Give people the room they need.’
- ‘Encourage experimental play. Try it — and quickly!’
- By giving people freedom and stimulating them to act autonomously, it will result in mistakes being made. However, in the long-term, the mistakes are not as serious as the

management's mistakes when it acts dictatorially and tells its subordinates exactly how to do their jobs.

Our BHAGs with Cordys

- Cordys wanted to be a leader in Platform-as-a-Service (PaaS) — to deliver a business operations platform, easy to use and affordable, changing the way of business on the web. We allowed organizations to improve their operational effectiveness by driving their business processes to innovation and continuous change.
- With its Business Operations Platform, Cordys established alignment between business and IT. It was no longer necessary to throw out the baby with the bathwater, as so often happened with traditional ERP implementations. We respected legacy systems and we're capable of implementing business improvement very quickly through a process of continuous improvement.
- Cordys excelled in offering customers the opportunity to duly exploit online/cloud computing's possibilities and capabilities while simultaneously leveraging existing on-premises IT assets.
- Cordys would be a world leader in providing a software platform to improve business operations.
- Cordys software was made easy to use and affordable. We allowed organizations to improve their operational effectiveness by driving their business processes to innovation and continuous change.

Our vivid description

- We wanted to keep the technology under the hood. Simplify to let complexity work for you. IT infrastructure should be connected to and from every device.
- Situational MashApps could be built in days without professional IT support, providing the knowledge worker with extreme improvement.

The Cordys software enabled organizations to dramatically increase the speed of change and apply business process management better and faster. The unique combination of BPM and cloud technology in the Cordys platform complemented existing enterprise software and added agility to business operations.

Summary of my role as an entrepreneur

- I left Baan Company at the end of the 90s, to start my new company Cordys. I saw this new start-up as a challenge to enrich our Baan ERP platform with next-generation technology

- High-risk investments in previously unknown new technologies can best be realized in a ‘Skunk Works’ construction. The term originated with Lockheed's World War II Skunk Works project.
- I felt like a serial entrepreneur with limitations. My new company focused on the next generation of intellectual property, focusing on the added value of our existing legacy products from Baan Company. With these ' Skunk Works,' I benefited from the advantages of the success of our existing platform.
- On the other hand, it reduced the risks those days for Cordys by doing this on my own outside of Baan Company and away from the existing shareholders.
- Shareholders often don't have any patience for the uncertainty that innovative research brings within a mature company, especially when seen as a ‘cash cow.’ Due to this decoupling, the failure costs were limited, and a successful product could be offered directly to the installed base.
- Motivating small innovative teams is my main strength. Managing ‘Operational Excellence’ in an adult company hardly requires entrepreneurship, and it is better to execute this with managers.
- Again, I have realized this in Vanenburg with our platform Collabrr, that a dynamic document can function as a booster for improving the task of the knowledge worker in the supply chain. Actually, that is the basis for the implementation of the new Industry 4.0 concept. While the focus previously was more on the company, the emphasis is now more on the knowledge worker's productivity, according to the late Peter Drucker.
- The beginning of the break-away technology for Cordys took place at the end of the last century.
- The birth of Collabrr, a micro apps platform from Vanenburg Software. Our Cordys platform was, just like at the time at Baan Company, ranked by the analysts as a high potential product that could not be matched by large companies such as IBM, Microsoft, and SAP. Cordys also had an excellent worldwide customer base with many large companies.

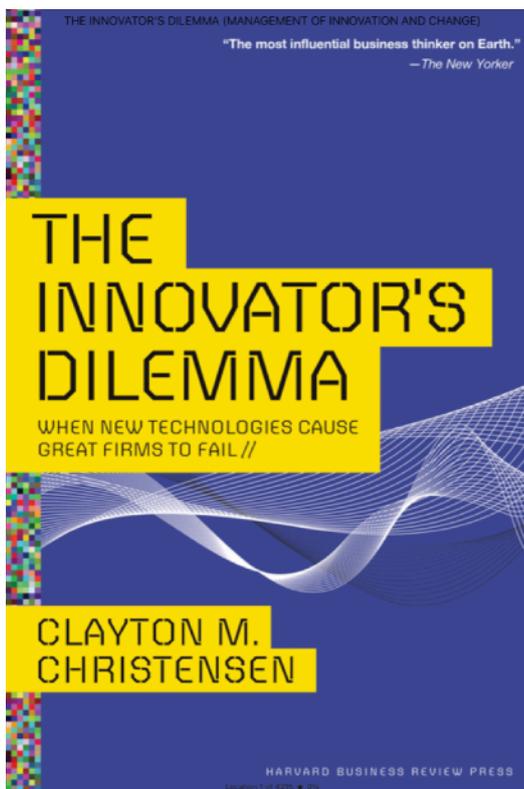
‘Disruptive innovation’ by Prof. Clayton Christensen

In 1997 Clayton Christensen ⁴ wrote his most famous book: *The Innovator’s Dilemma*, about when new technologies cause great firms to fail. This book is about the failure of companies to stay atop their industries when they confront certain types of market and technological change. It’s not about the failure of simply any company, but of good companies—the kinds that many



⁴Clayton Christensen April 6, 1952 - January 23, 2020 was an Harvard professor and business consultant who developed the theory of "disruptive innovation", which has been called the most influential business idea of the early 21st century.

managers have admired and tried to emulate, the companies known for their abilities to innovate and execute. Companies stumble for many reasons, of course, among them bureaucracy, arrogance, tired executive blood, poor planning, short-term investment horizons, inadequate skills and resources, and just plain bad luck. But this book is not about companies with such weaknesses: It is about well-managed companies that have their competitive antennae up, listen astutely to their customers, invest aggressively in new technologies, and yet still lose market dominance. Such seemingly unaccountable failures happen in industries that move fast and in those that move slow; in those built on electronics technology and those built on chemical and mechanical technology; in manufacturing and in service industries.



Success is very hard to sustain

Christensen explained about management as a statement of causality. It's a statement of what causes what and why and when you think about it in those terms, you as technologists or managers are voracious consumers of theory.

Because every time you take an action, it's predicated upon a belief that, if you do this, you'll get the result that you want. And every time you put a plan into place, it's predicated upon a set of theories, which tells you, if you do these things you'll be successful. But most of the people aren't even aware of the theories that they use. And many times, the theories that you use are destructive rather than productive. He explains the problem with metrics and how you measure things, as the huge deal, which blocks the theory of disruption and mentioned different types of innovation, which

are playing specific roles in the growth of companies and economies.

There are potential products, meaning nobody's figured out what these are yet. Then the second one are sustaining innovations that makes those products better. The third are disruptive products that grow markets. And then, the fourth are efficiency innovations in which they sell them off in order to get their money back. About potential, almost of all of the products initiated in a company, only about 15% to 25% of them will become financially successful. And it's broadly viewed that innovation is a crapshoot.

The reason why it appears that we can't predict in advance whether a customer will buy the products that we're developing is that people at business schools like Harvard teach

marketing in a perverse way, therefore Christensen concluded that understanding the customer is the wrong unit of analysis, because more important is the job to be done. Almost all of the work that we do in assessing market potential, are related to the characteristics or attributes of the potential customers.

There is a better way to think that when we jobs arise, to find some way to get the jobs done. And some of the jobs are simple incremental things that happen regularly. Others are dramatic and important breakthrough problems. But whenever we have a job to do, we have to find something and pull it into our lives, in order to get the job done. Understanding the job is the critical key to develop products that we can predictably make and find customers to buy.

If we understand what the job is, then we can ask the next question. So what are the experiences in purchase and use that we need to provide in order to do the job perfectly? And if we understand what those experiences are, then we know what to integrate and how to integrate it so that we can provide the experiences needed to get the job done.

If we understand that, then it tells us what kind of brand we need to apply to that product. So that when they find themselves needing to get the job done, that brand pops into their head. So to summarize why it is important that we need to understand the opportunity in terms of the job

rather than the customer. We need to understand what the job the customer needs to do and how customers will choose us. We also need to then be able to say what we can do that other people can't, which is how we integrate. And finally how will everyone knows what products does the job best.



1. The first type of innovation we call them potential products, because we don't know their potential unless we understand the job to be done.
2. The second type of innovation we called sustaining products that make good products better. And so the day after we launch into a new product where you figured out there's a job to be done, we have a product to do the job well and immediately we start improving those products. We call those products sustaining innovations, almost all of the innovation we see are sustaining products. Of the innovations that we see are sustaining products. They help companies keep their margins healthy. They are the mechanism for gaining market share.

Most products are engaged in sustaining innovations. They're critical, because they replace legacy products to sustain your historical growth.

Imagine that I'm working for Toyota and I convince you to buy the Prius hybrid car.

Then you won't be buying a Camry. If I sell you this year's best product you won't buy last year's best product. And so, by their very nature, sustaining innovations, although they are important, are replicative in character. And most of what we think about as innovation this sort second type of innovations.

Sustaining Innovation	Disruptive / Growth Innovation
Potential Products	Efficiency Innovations

3. The third type of innovation we call disruption. And they create growth. In this complicated slide below you see this three concentric circles and what they're made to represent is actually you can describe the history of any company in term of these three circles.

The innermost circle represent the customers who have the most money and the nest access to a product of services. And then if you go to the larger circle, they represent larger populations of people who have progressively less money.

Almost always, industries begin in the center, because the first product and services are so costly and complicated that only people who have a lot of that are able to buy it and use it. Let's describe what disruption is and why it creates growth. We put on the vertical axis the performance of product or services over time. In every market there are two trajectories. The first one is, in every market there is a trajectory improvement that customers are able to utilize in their lives. And we don't think about this very much, but our lives don't change a lot and that's why this is so flat.

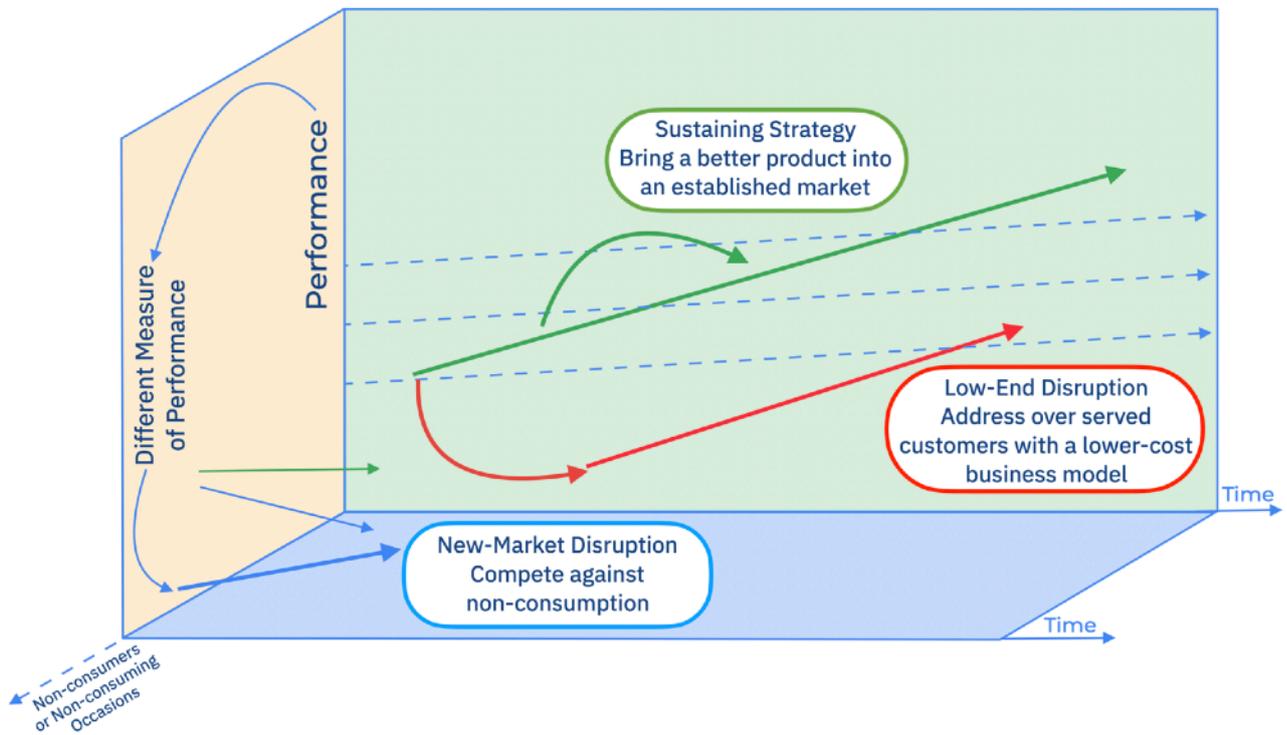
Then in every market there's a different trajectory of improvements that innovating companies provide as they keep introducing better and better products. And the most important finding about this is this trajectory of technological progress almost always outstrips the ability of customers to use the product. And what it means is that a technology, at the beginning that isn't very good actually is prone to overshoot what the same customers are able to utilize at a later point in time.

Now some of the innovations that help good products better are incremental innovations. Others are dramatic breakthrough innovations. But we use a word for them that we call sustaining innovations, because they're really important.

Almost always incumbent companies who are the leaders find themselves still on top of the industry when these battles of sustaining innovation are over. And if you want to start a

new business and you want it to be successful and you think you can beat the incumbents

The Third Dimension of the Disruptive Innovation Model



by making better products that you could sell for better profits to the customers best competitors they will kill you. And the evidence is really very strong. It doesn't matter how big or powerful you are. If you think that you can beat the incumbents in their market, they will kill you.

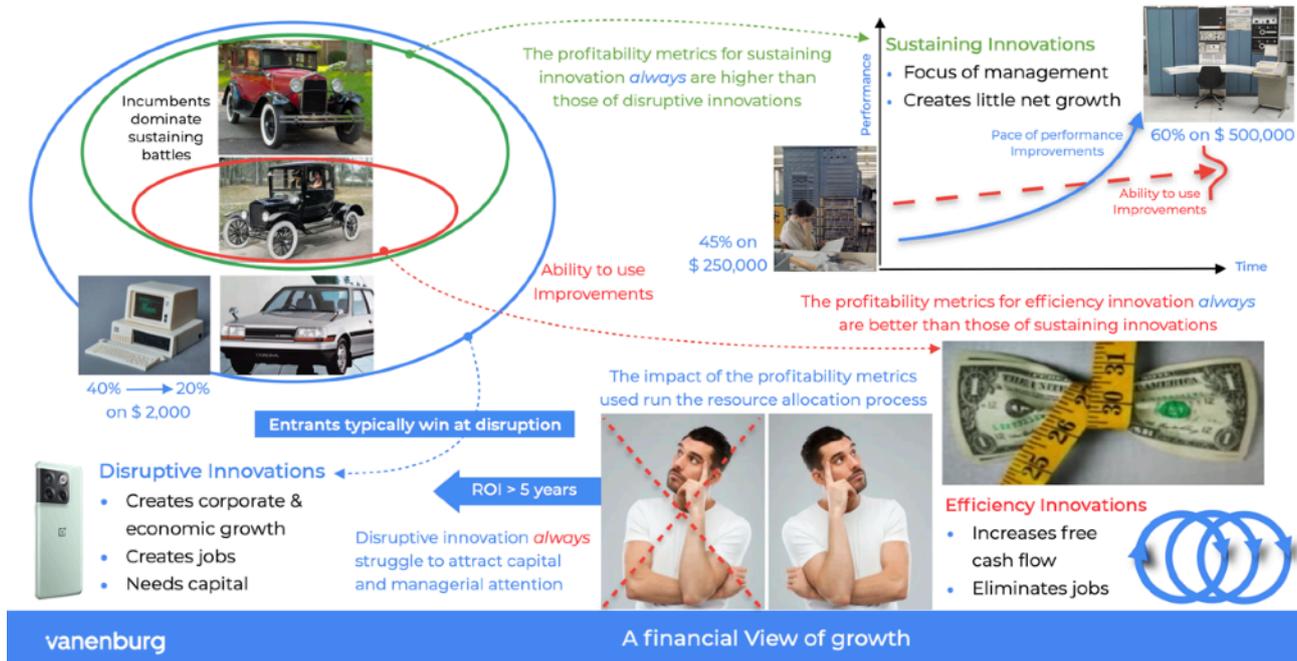
But there's another type of innovation that we call disruptive innovations. And disruptive innovations transform products which, in the middle of the slide above, were to complicated and expensive.

Now, disruption makes it so much more affordable and accessible that many more people are able to use those products or services. And almost always, entering companies that typically win at disruption are changing the world by making it affordable and accessible. And none of the incumbents who beat in the past are around today, because entrants typically win. This will be described in the next story why.

Digital Equipment Corporation fell off the cliff

In Boston there was in the 1970s and 80s a company called Digital Equipment Corporation (DEC). At that time DEC was widely viewed as Google is now. It was the most widely admired company in all the world. And when you read explanations about why they were always so successful, was attributed to the brilliance of their management team.

The Innovator's Dilemma - Clayton Christensen



Then, about 1988, DEC just fell off the cliff and began to unravel very quickly. When you then read explanations about why they had stumbled so badly, always it was attributed to the ineptitude of the management team. And the very same people were running the company.

And for a while, professor Christensen framed the proems as, how is it possible that star people could get so stupid so fast? And that's really the explanation that most people churn up when a company stumbles. That somehow, a company that act together with a brilliant management team at one point at another time dropped out of their league and falling of the cliff.

But the reason why the manager hypothesis just didn't feel right is that every company that made the same class of mini computers, which were about the size of this pulpit. Every company that made mini computers were killed in unison. Is wasn't just DEC.

But also Data General, Prime, Wang, Nixdorf, Hewlett Packard, Honeywell. And you expect these people to collude on pricing occasionally. But to collude to collapse was a stretch.

This was Harvard Business School's puzzle and when they understood it a little better, they realized that this minicomputer was quite a complicated product that had to be sold direct to the customer. And the selling process involved a lot of training and support and services and software. And you had to have a cost like that in the business to play in the game. And that meant that Digital Equipment had to generate gross margins of 45% on computers that sold for \$250.000. And that's how they made their money.

Now in their company, as in every company, there were people coming in through the 1980s all the time with ideas for new products that they could develop. Some of these

entailed making better products than they had ever made before. In fact, these minicomputers would be so good that they could reach up into the tiers of the market, where people historically had to buy mainframe computers. You looked on those business models, they could generate gross margins of 60%. And you could sell the products for twice as much money.

So while the management was trying to decide if that's what they should do, there were other people coming in saying, ladies and gentleman, you don't get it. Just look out the window. Everybody is buying personal computers, which was the case in the 1970s and '80s. But when management would look out, in fact, they could see that everybody was buying personal computers. But there were a couple of other things that bothered them a lot.

The first one remember how crummy those early personal computers were? Apple sold the Apple I as a toy to children. Not a single one of DEC customers could even use a personal computer for the first 10 years that they were in management. And then they got no signal from their customers that the personal computer matters, because in fact it didn't to them. And then, when you looked at the business details, it looked a lot worse, because these small computers only generates a gross margin of 40% and they were headed to 20% quickly. And you could only earn those paltry percentages on computers that sold for \$2,000 bucks, and so the question that the management had to address was let's sit down here and wonder if we should make better products that we should sell for better profits to our best customers? Alternatively, maybe we should make worse products that none of our customers would buy that would ruin our margins. What should we do? And it is a very, very hard problem. And we call it the innovators dilemma.

The question is: Should we make better products for better profits for our customers? Alternatively, maybe we should made worse products for customers that would require ruin our margins. This is the innovator's dilemma which is a very hard problem. Because by doing the right thing is the wrong thing and doing the wrong think seems the right thing. This happens for customers who historically couldn't have access to simple products by the initiative of Black Berry, which grew up and killed leaders like IBM - DEC - HP - Compact - Sun. Black Berry just knocked off sitting down with a laptop. And then Apple disrupted Black Berry with the power of the smartphone which is today a computer 25 million times more powerful than the IBM 1401 mainframe.

IBM's efficiency innovations at the mainframe

IBM dominated the mainframe business. Their 8 colloquies are killed by the mini computer. IBM with their mainframe business produced in New York, started a minicomputer manufacturing for their AS400 in Rochester Minnesota. From the 9 mini

computing companies, only IBM succeeded by their new business unit in Florida by making 25% gross margin on their products instead of the 40 till 60% in the past.

HP by selling laser printers disrupted by their Inkjet printer division in Vancouver with their own salesforce. But HP and IBM became in deep problems not following that.

Potential innovators which we understand by understanding 'the job to be done' innovations by making good products. Sustaining innovations making good products better. Efficiency innovations helps us to do more with less ROI which is to keep us competitive, but they reduce jobs, but they create free cash flow. Wall Mart is an efficiency innovation company like Toyota. It's important to delay to be killed sooner rather than later. This puts us in the center of the market.

Skunk Works as disruptive innovations

We did this of Baan Company as a Skunk Works investment in our private Vanenburg holding company by investing big money in WebEx and TopTier, which we financed by pledging our shares for bankers' loans. We tried to do this disruptive innovative initiative in the slipstream of Baan Company, but we couldn't succeed with this and as a consequence, I quit Baan Company to have full focus on our next Cordys initiative, which means we burned our ships and started again.

Because mostly the capital is the problem because it takes at least more than life years before you have an EBITDA profitable business through disruptive innovative initiatives. Therefore we were lucky with the value of selling the Baan shares first, and later by selling our shares in TopTier and webEx.

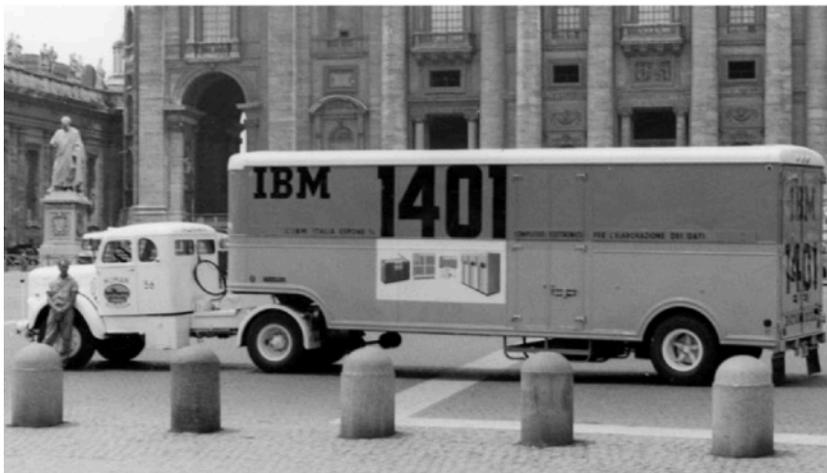
It took us more than 10 years in Cordys to build a serious market with larger innovative companies, but with a negative EBITDA. The reason that our VC investor Argonaut was not patient enough to wait for this was alas that our Cordys company became acquired in 2008 by OpenText, where the Cordys business operations platform still became an interesting and important component in their more legacy and sustainable innovative business offerings.

This has given us again the freedom to start with all our experiences and even more important with a knowledgeable workforce again with a disruptive innovation project from scratch, but as consequence, we burned our, more limited, market cap in Cordys by using this as a higher priority for a short-term cash, needed for our new long term disruptive innovative drive.

Even today we see many Indian software companies focussing on low-code adaptation because they can't longer afford to grow the big software workforce for building traditional

Edge Computing (close to the data)

Decentralization of computing is not new. When mainframe computers were run by the server department it was a type of movement towards the edge. Today, the 'edge computer' for people is the [smartphone](#). The IBM 1401 Data Processing System was the first computer to travel the world solving data processing problems. While the 1400 series was first released in 1959, it continued to be a popular workhorse up into the 1970s, and remains a culturally inspirational machine to this day.



5-ton IBM 1401 mainframe (with 16 kilobytes of memory). The data-mobile at the Vatican, June 1960

This version travels in your pocket and makes all the difference.

iPhone 12 Pro
It's a leap year.

5G goesPro Max. A 14 Bionic rockets every other smartphone chip. The Pro camera system takes low-light photography to the next level.

vanenburg

A computer 25 million times more powerful

software. Also disruptive generated low code apps are needed included with care for the cyber security of the people.

In the picture on the next page we really see the differences over the past 50 years. In the 1970s, the mainframe computer was used for the first time to make administrative processes more effective. I remember from the start of my labor process that I started to produce punch cards that were used as simple data components to invoice or realize simple sorts. Then we received the magnetic strip to ensure that the debtor administration was updated from the invoicing. In addition to being simple, the automated processes were also simple. Now 50 years later we now have a smartphone that, like a computer, is 25 million times more powerful than the mainframe shown above from 1960.

Als If we then compare the development in technology, we must determine that the improvements of the business processes. have only been realized very moderately. But now by using IaaS (Infrastructure-as-a-Services), we see that companies such as Google and Amazon offer us powerful tools that now make the integrated tasks of the knowledge workers much easier, as well as more productive.

With the Cordys Process Factory, which product soon became a spin-out form Cordys into Vanenburg, we first used our tools for developing systems for business native startups and also in most cases financed those with a loan for financing the customers development costs together with a revenue sharing model. After a few years we found Valeo a leading automotive company with over 100.000 employees as a new partner for using our platform

at a replacement for their thousands LotusNotes applications, but given the risk they payed us only a very small account for this. But with this entree, Valeo became our market maker after 10 years of big investments.

Especially the Baan-culture from the past with the 3I's are good corporate factors to empower midlevel employees not to ignore or kill disruptive technologies. See for this my autobiography part one, chapter 8: On being human in business.

The Intel story

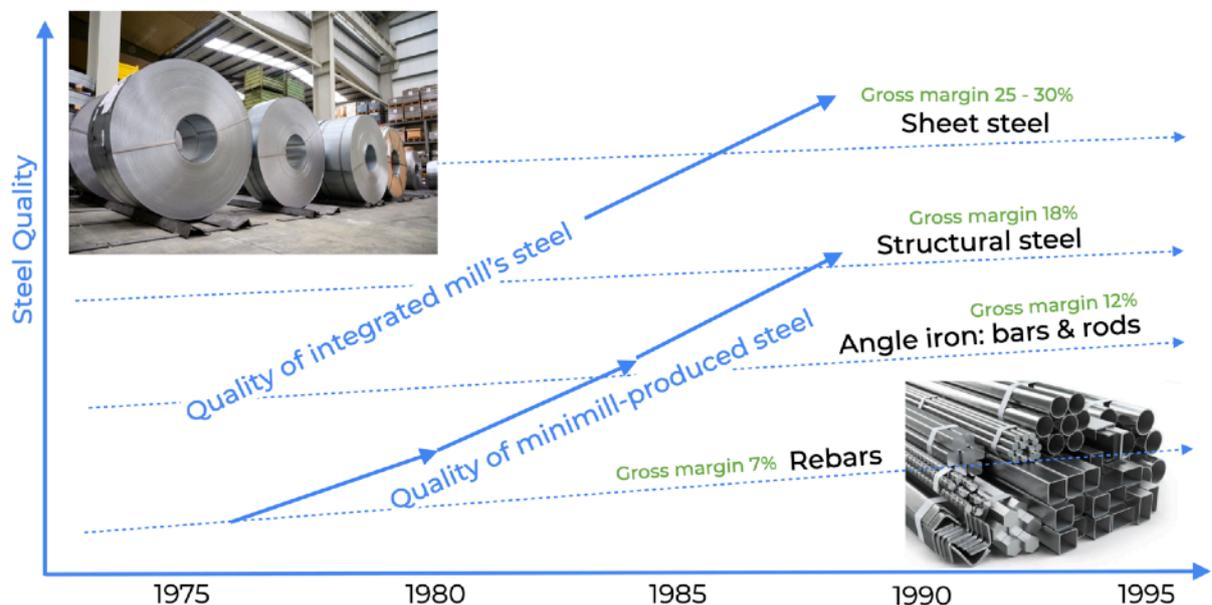
Clayton Christensen has learned a lot from Andy Grove. He is explaining his exiting visit to Intel.

I was just at HBS minding my own business and Andy Gove called me just out of the blue and said: 'look I'm a busy man, I don't have time read drivle from academics, but somebody told me you had this theory and can you come out and present what you're learning to me and my staff and then tell us what it applies to Intel.' This was for me a chance of a lifetime, so flew out there and turned out that Andy was quite a gruff man and he said: 'you know stuffs happened to us we only have 10 minutes for you, so just tell us what it means for Intel.' And I said Andy I can't because I have no opinion about Intel, but the theory has a opinion and so I have to describe the theory, so he sat back in patiently and after 10 minutes he chucked me off and he said: 'I got your stupid theory, tell us what it means for Intel.' Andy got what he got and he really did get it, you know, and I said Andy I need five more minutes because I got to describe how this process of disruption worked its way through a totally different industry, just so you can visualize what can to Intel.

So I described how the mini mills came in to the steel market at rebar and then went up market.

When I was done with that Grove said: 'Oh I get it, so what you're telling me it means for Intel is. He described that they had two companies coming at him from below and Intel needs to go down and not let them go up against us.'

The Flee or Fight Response to Profit



It was very successful and I've thought about this. If I'd have been suckered into telling Andy Grove what he should do, I'd have been killed because he knew so much more about micro processors than I ever would know. But rather than telling hem what to think, I taught hem 'how to think'. And he could reach his own conclusions.

This event change the way I teach, it change the way I talk and the insight is that for whatever reason the way they designed the world, data is only available about the past and when we teach people that they should be data-driven and fact-based and analytical as they look into the future, than in many ways we condemn them to take action when the game is over.

The only way you can look into the future, there's no data, so you have to have a good theory and we don't think about it, but every time we're taking an action it's predicated upon a theory and so by teaching managers to look through the lens of the theory into he future, you can actually see the future very clearly.

I think that's what the theory of disruption is.

WebEx acquired by Intel as a disruptive solution oppose Tandberg's meetings

In 2006 Intel bought webEx, just after IBM agreed to buy them and Intel becoming aware of this and Andy Grove being afraid of the disruption from WebEx for their Tandberg's Experia video system, just bought WebEx in a few hours, making the deal with Subrah Iyer, webEx's CEO.

Cisco bought WebEx in 2006 for \$ 3.2 Billion. In principle, WebEx had concluded a deal with IBM, but at the last minute, Cisco jumped in and gave a better deal, which was completed in a single day. In those days, Cisco was a market leader with web meetings. Partly due to the acquisition of Tandberg, they had become the market leader with digital



Tandberg Experia Video system

meetings used at big enterprises. And with WebEx, Cisco found them a threatening competitor, especially through webEx's Disruptive Innovation approach to be able to offer those services on mass on a premium basis for the participants. This acquisition has not been successful because the innovation power was demolished by the acquisition.

In 1998 I became the first outside shareholder of WebEx with an interest of 33%. Thanks to our investment money, at the time a substantial amount of tens of millions, WebEx was able to use our money for a freemium model, so WebEx managed to break through at the bottom of the market in a disruptive way.

The two WebEx founders, the Indian Subrah Iyer and the Chinese Min Zhu had their development team in China. One of their core engineers at the time was Eric Yuan, which has been transferring from China to San Jose.

Eric Yuan had seen it at Cisco after a while and founded the company Zoom on the basis of disruptive innovation, and become today's market leader with a market cap of 36 Billion (June 2022).

So without my investment, there would have not been a company called Zoom today and I have also been able to learn a lot from my relationship with WebEx for innovative disruptive innovation initiatives, especially now in starting up my new venture, Vanenburg.

9. Digital enterprise

Industry 4.0

During the rise of the cloud we understood that the market needed a different approach. We had learned that both on- premise ERP and most cloud solutions are still functioning as silos for each enterprise. We wanted to answer the question: what if we can create a new cloud solution where an enterprise can join and connect to other enterprises and set up collaboration? A solution that reuses and combines structured business logic with unstructured information to establish flexible business processes and collaboration that can be continuously optimized and improved faster than ever.

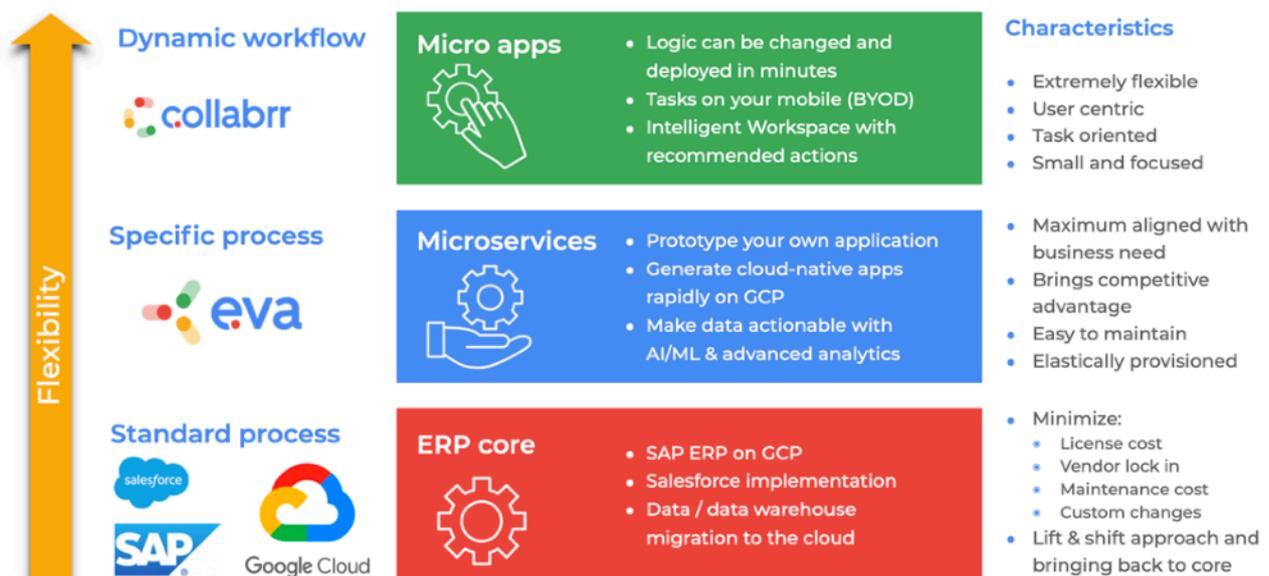
In fact, the whole idea was one of the first behind a new generation of intelligent and connected applications. Recently, this technology wave became more formalized when Forrester called this new category of application software ‘smart-process apps.’

Smart Industry 4.0 is the fourth industrial revolution. The IoT is often mentioned as the fourth industrial and economic revolution. The four revolutions are:

1. Economy 1.0: steam engine
2. Economy 2.0: mass Production
3. Economy 3.0: digital revolution/internet technology
4. Economy 4.0: mobile internet and internet of things

We live in the epoch of the digitization of the enterprise. This is ultimately about supporting the knowledge worker. A knowledge worker is actually anyone who works in an organization – the business community, the government, or a nonprofit organization – with

Our vision on agile enterprise software



information to carry out his duties and thereby collaborates with others. Supporting the knowledge worker requires dynamic IT applications that regulate the tasks between the knowledge workers (internet or people), based on integrated back-office processes (internet or business processes). Smart Internet of Things solutions can further support the processes and the people. We bring all this together in our company Vanenburg. It is about quickly combining aspects such as mobile, collaboration across the chain, and the Internet of Things.

As a result, new applications can quickly be created that support new concepts and activities. However, it also involves facilitating the knowledge worker who, with this digitization, will be able to realize enormous productivity gains in his processes — in the systems of differentiation.

Concretely, the knowledge worker can collaborate with other people inside and outside his company to, for example, compose dynamic documents that communicate at a task level, call it a business WhatsApp, although WhatsApp now limits itself as a consumer tool to only unstructured data.

Ultimately, it is of fundamental importance that these improvements are added to the decoupled legacy systems from the first layer systems of record and the integration and process functionality from the second layer systems of differentiation. With these improvements, a company can respond much faster to changes it faces and eventually transforms itself step-by-step into a digital company.

First layer: data systems (transactions)

The systems from the first layer are called Systems of record by Gartner. These are systems suitable for keeping and storing data and complex logic, exactly the purpose for which they were built. According to Gartner, it is desirable to use this for the future as long as possible, but then as 'plain vanilla' applications in which it is no longer permitted to make bespoke products.

This customization must be disconnected from the application and take place elsewhere (in another layer). This creates flexibility, and future improvements are, because of this, easy to implement. The motto is: never to tinker with generic systems again because we have to build this customization with the very outdated programming languages these legacy systems are built. Adjustments must be separated from the standard solution so that upgrades are no longer hindered by it. Unfortunately, adjustments in legacy systems are still being built by system integrators in the outdated platforms. Innovation is limited to 'hourly invoices.' It is not for nothing that this is still called the 'body-shop industry. Often people continue to muddle with outdated systems. Adjustments usually have little to do

with complex transaction-driven systems but are much more role-directed (workflow) solutions for knowledge workers. They must, therefore, actually take place in another layer in the IT architecture.

In the 1980s, relational database technology and the MRP algorithms helped us expand our logistics solutions to the so-called ERP. In addition to planning and inventory, the financial data was linked, simplifying the periodic reporting for the shareholders. This is why the ERP solution belonged to the core systems of the company. Meanwhile, many users feel that they are (still) tied to their software supplier. Also, the mostly UNIX-based client/server infrastructure and the event-driven 4GL language were crucial to building these complex systems. SAP and Baan Company became market leaders in the nineties for complex ERP systems. At the end of the last century, we were confronted with the Y2K (or the year 2000) problem. All innovative strength was used to make the already obsolete systems at that time suitable for the next century.

This operation was successful so that after January 1, 2000, the obsolete systems remained in use. After that, hardly any functional improvements have been implemented, and few innovations have been realized. Microsoft, for example, was forced to bundle these 80s systems for mainly smaller companies in a billion-dollar project: Microsoft Dynamics, at the beginning of this century through the acquisition of Axapta, Navision, and Great Plains. However, this complex operation did not result in a replacement for the already existing complex ERP systems, such as SAP, Baan, JD Edwards, and Oracle.

A normal business needs at least four IT domains to realize good value creation. In addition to ERP, CRM, PLM, and SCM are indispensable for many companies. All these systems, with their origin from the last century, before the internet was active, have the characteristics of their complex database structure with the many tables — 10,000+. SAP gets the crown with 80,000 database tables. As a result, we experienced the extreme growth of the system integrators at the beginning of this century. The costs of this customization and the implementation of these complex legacy systems were often the purchase cost of standard software.

The traditional way of working did not make the system integrators much money, but it often resulted in dramas for the customer. A good example of this is the Speer project at the Ministry of Defense, in which the traditional tinkering of system integrators has resulted in a very complex SAP project of more than 1 billion Euros. Despite the huge amount spent on it, it is frustrating to note that this complex sample has hardly been workable. Thanks to their traditional method, the 'integrators' have also ensured that the old legacy systems are difficult to replace. This enabled the large software suppliers to lean back over the past 15

years and get their maintenance payments with hardly any innovation efforts. The service providers could just continue their traditional golden business.

Second layer: integration & process management

A second layer is required to keep the 1st layer generic, and this is the 'systems of differentiation' or an integration and business process management layer. This second layer ensures that systems in the 1st layer can communicate through a so-called SOA (Service Oriented Architecture). This integration technique ensures that all underlying systems are accessed, linked to each other and parent applications.

The entire business process can then be mapped out through Business Process Management techniques, and flexible applications can be created that fit in with the business processes. This means that an integrated monitoring system can also be implemented. For the first time, there is an insight into the end-to-end business processes. Within this still structured data storage, we are building an 'Operations Excellence' business environment, emphasizing continuous improvement of the internal business processes. As Forrester indicates, it will become important for the future use of existing complex legacy systems to collect the data from the underlying systems more and more as entities for better control of this basic data and the optimal reuse in the third layer.

At the beginning of this century, the idea became alive to integrate these systems through a Service Oriented Architecture (SOA). The BPM (Business Process Modeling) standard accepted as a standard made it possible to compile these many individual silos — ('composing') — into a business end-to-end (E2E) process and as a cloud solution for every participant worldwide.

At Cordys, we were at the forefront of these BPM solutions. The characteristic of these BPM solutions was the possibility of working with Case Management processes and the transactional systems, which were integrated from the silos, on a business process. These rigid transactional backend solutions were now enriched with a case-driven business process, using the new technological possibilities. In places where people could no longer control this with transactional systems further downstream in the business process, the spreadsheet drama was introduced as a tool for the knowledge worker. Excel is often called the most dangerous software program due to lack of manageability and compliance. Now, with dynamic case management from Cordys, the business process could be managed unambiguously right up to the delivery to the customer.

CIOs often failed to see the innovative possibilities of isolating legacy systems as a vanilla solution (without the customization) in the 1st layer: systems of record and then decoupled these from the internal business process in the 2nd layer: systems of differentiation.

Although these BPM cloud solutions made the inbound business processes of an Enterprise much more manageable, they were still limited to structural data, and there was no meaningful use of the 'Consumerization of IT' due to the many possibilities of the smartphone aimed at IoT and Big Data.

In the meantime, we have seen the popularity of SaaS rise in recent years. Here Salesforce managed to displace the then-dominant Siebel with their innovative CRM system. These experiences have made Salesforce the market leader in the PaaS domain with its 'Salesforce1 PaaS' platform, of which thousands of SaaS solutions are now operational in the Salesforce apps Store.

Think also of Workday, a PaaS leading platform for Financials and HR processes. Especially the inherited objects present in the Salesforce platform make it easy for developers to enrich these objects with their own IP (Intellectual Property), in which database queries are greatly simplified, and it is also made possible to model their business processes, which was not possible in the transactional systems from the 1st layer.

Instead of the 10,000+ tables, we now have only a few hundred objects to manage. If you speak in automotive terms, you could compare these two different techniques with, for example, a Jaguar from 1990 and a Tesla from 2018. Both products have mechanical and electronic components, but Tesla adds software components to this. The car is no longer supplied as a final solution from the factory but can now be regularly upgraded by innovative software solutions.

The difference is not only because the components of the Jaguar were built in the last century and are therefore very outdated, but the real breakthrough is in reducing the number of components. Tesla has less than 50% of the components compared to the outdated gas- guzzling Jaguar and runs clean and economically on electricity. If you love classic cars, you could occasionally drive one to enjoy nostalgia, but you wouldn't let your daily mobility depend on it.



Compare 25 years old Legacy products with IT devices

- Software replaced the electronics of the Jaguar from 1990 in a 2018 Tesla, which is continually improved through software updates. The Jaguar components are from the last century. The reduction of components becomes a real breakthrough.
- As with PaaS objects, Tesla has drastically reduced components. No like the fuel-guzzling Jaguar (**high maintenance**), but driving on clean electricity (**reduction deployment cost**).

This should also be the case with the available industrial cloud solutions. The elasticity of these systems not only drastically reduces the implementation costs of deployment, but more importantly, the systems remain up to date because they are regularly updated without the user having to deal with them.

The new Cloud-ERP system from Rootstock on the Salesforce platform has been available for a few years now. Rootstock has a vast experience built up over the past 30 years, as evidenced by the broad and deep functionality with a flexible architecture.

Third layer

The highest added value is created in the third layer or the 'systems of innovation.' This concerns mobile technologies, collaboration across the chain, and the IoT.' Ultimately, however, it is about facilitating and improving the knowledge worker's productivity.

In this third layer, knowledge workers inside and outside the company work together with dynamic documents and collaborate in a kind of Facebook way, while at the same time, there is a link with all internal data in the old systems from the first layer.

According to Gartner, in this third layer, systems of innovation, new applications are being built that meet new business needs or opportunities on an ad hoc basis. This involves an experimental environment for testing new ideas and identifying strong improvements of the business processes for knowledge workers, especially with 'engagement' in the supply chain. Integrating the three layers with a simple workflow creates smart, collaborative process Apps, which will greatly improve the productivity of the knowledge workers.

The new technological solutions are no longer characterized as complex projects devouring millions but are built as personalized apps that usually communicate from the mobile phone or are at least accessible from an internet browser. The costs of building these apps are significantly below the tender standard and can be built by a local user, often young graduates. It's really beneficial that from now on, the own staff members who have insight into the tasks to be performed can build their own Apps. These knowledge workers can also absorb the sensor data from IoT and play with consumerized machine learning tools.

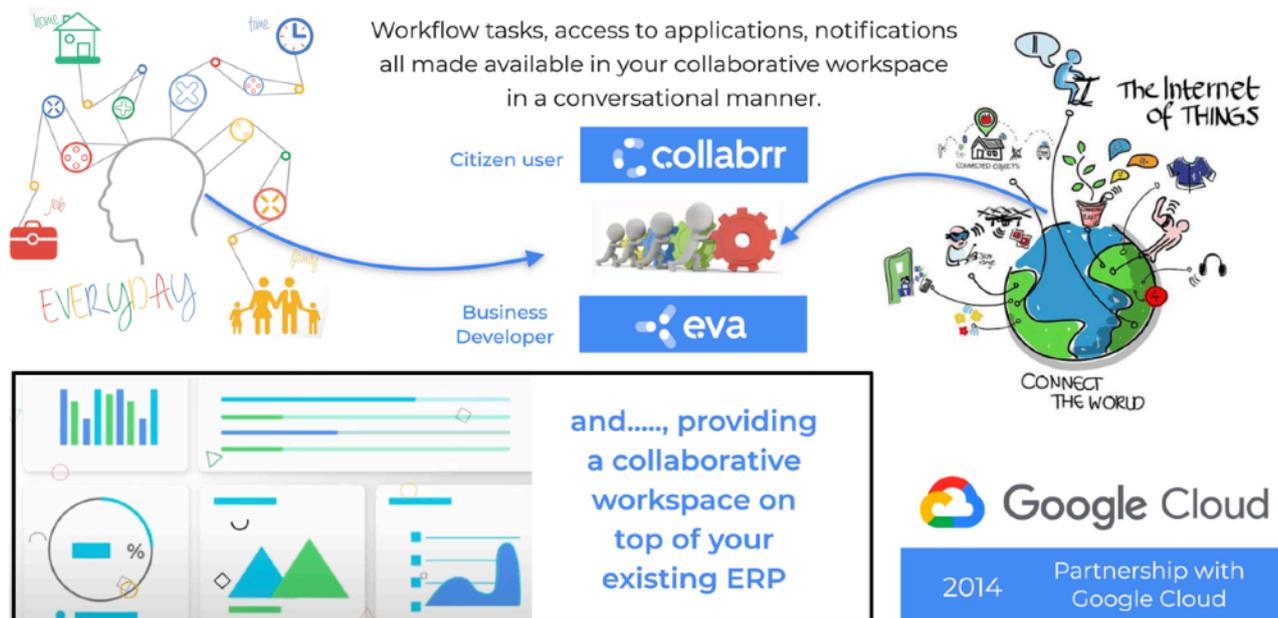
Key Performance Indicators measure the productivity of this new generation of knowledge workers and then also assess the sense and nonsense of building this new generation of Apps, which can be improved over and over again due to their speed. From the beginning, in Vanenburg, we have been involved in smart process apps.

We see the document as a dynamic manifestation—a kind of XML file.

In the third layer, the innovative apps can be seen as a 'disruptive' business process. With our case management experience in our 2nd start-up, Cordys, we have also succeeded in adding case-driven workflows to the aforementioned dynamic file. This can be seen as a kind of business WhatsApp. Our product Collabrr facilitates the modern knowledge worker to collaborate in a network to create secure documents and easily maintain contacts and share these documents (texts, spreadsheets, presentations, files, UI screens) with business partners.

For example, an organization communicates a lot with its suppliers about orders, product status, and goods receipt. All this collaboration and communication can now take place in a smart 'procure-to-pay' - App. These apps can be enriched with information from IoT and big data. The emphasis here is on the productivity of the knowledge worker who collaborates with his supply chain colleagues. This State-based machine workflow in our Collabrr platform is event-driven. Condition-based transitions to different statuses or steps can be inserted, such as events or notifications. This allows powerful apps to be built that can be integrated with, for example, a complex external BPM platform or with complex machine-to-machine communication.

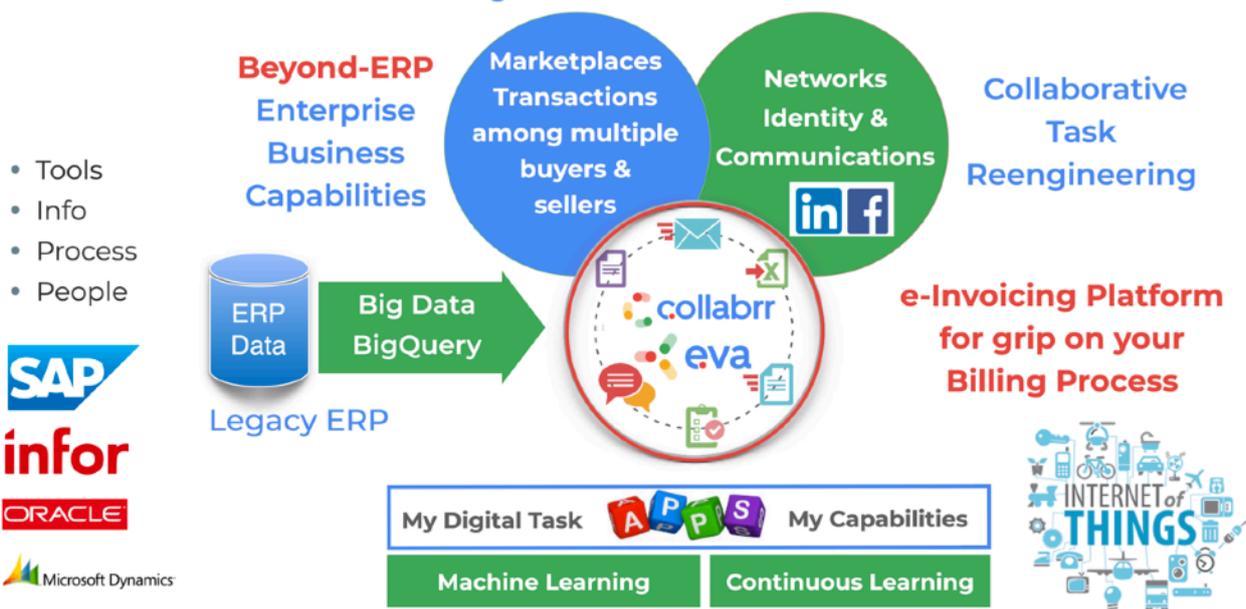
Improve the productivity of the Knowledge workers



The app as a connector between marketplaces and social networks

This slide provides insight into the execution of the 'outbound-oriented' tasks that concern cooperation in the supply chain. On the left, we see that we want to pick up the data from the backend processes around people, processes, tools, and information. This data comes from all kinds of back-office systems, often outdated systems, and are merged as an end-to-end process in Gartner's 2nd layer, the layer called the 'systems of differentiation.' These processes focus more on the internal organization and are more focused on the 'compliance' aspects.

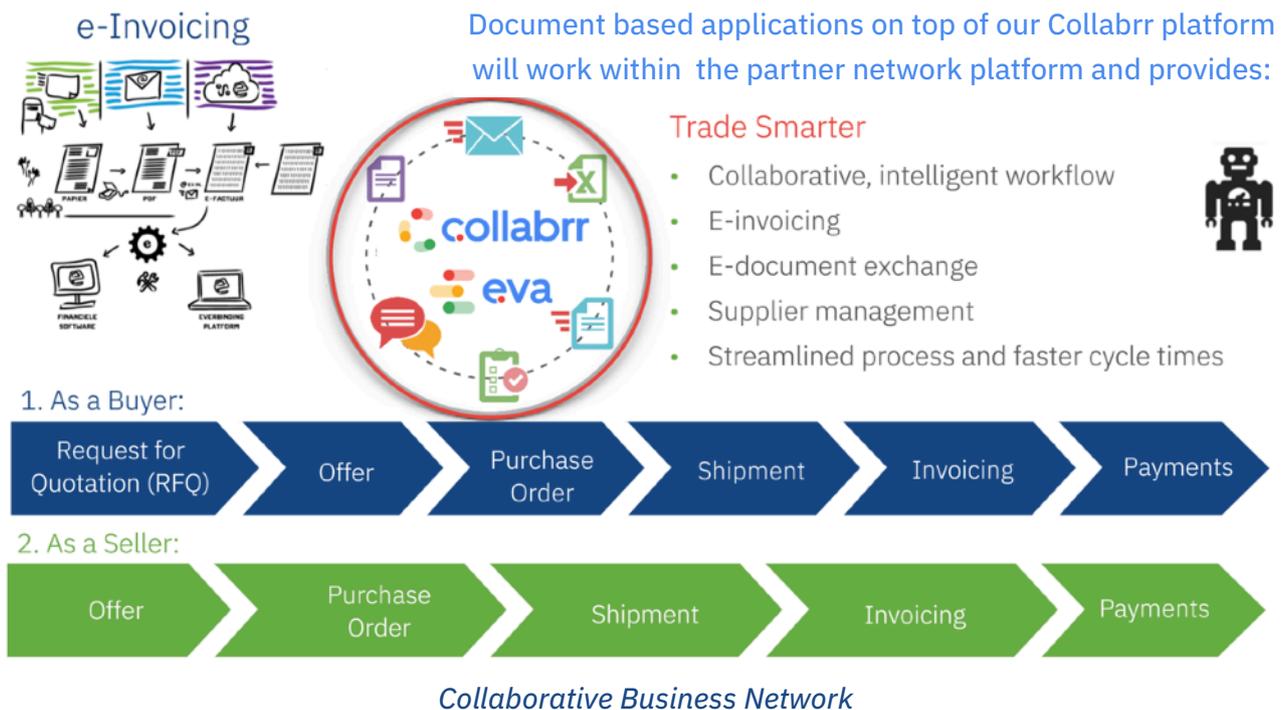
The road to Industry 4.0



vanenburg

The knowledge worker will need this process data to carry out his task and will further enrich this information in so-called workflows. To date, we have no insight into the tasks to be performed in the near future. These are hidden in the many spreadsheets or static documents, such as Microsoft's widely used Sharepoint technology. Therefore, further optimization of the 'Digital Enterprise' is blocked; after all, a PDF document or a Spreadsheet is static and does not synchronize with the information in the back-office systems. The knowledge worker also needs dynamic data here.

With our product Collabrr, a dynamic zero-code platform, we ensure that the semantics of all data remain preserved. With our smart workflow apps, the knowledge worker can now ensure that his tasks can be performed dynamically. Because the time aspect of the workflow is being maintained, we obtain a unique insight into the time-bound capacity of the tasks to be performed. We call this Collaborative Task Reengineering (CTR), a new variant as an addition to ERP.



CTR enables the knowledge worker to continuously improve the workflow processes and integrate the IoT environment with their supply chain counterparts. Because the knowledge worker now gets a much better insight into the tasks to be performed, we mainly see that the decision-making power is shifting from the manager in the back office to the knowledge worker who is active in the field and whom I want to describe as an Intrapreneur. This is a kind of independent entrepreneur for the workflow processes (tasks) he or she is responsible for.

From this dynamic workflow, which increasingly takes place on my own mobile device, I can also easily communicate with the data from the sensors linked to the internet of Things. I now also receive automatic suggestions through machine learning and I have access to a self-learning system to execute my tasks. All relevant information from my tasks can be offered via Marketplaces, and the social data of the relevant people can also be communicated via Networks to see whether conflicts arise for the tasks to be performed.

The workflow apps ensure that the administrative consequences for these tasks no longer have to be processed from all individual back-office solutions within the various companies in a complex way but can now be carried out for the first time in collaboration with the people in the chain. Here we see the 'Digital Enterprise' taking shape for the first time. The consequences for the journal entry for the parent companies of the knowledge worker (intrapreneur) are easily reflected in the relevant back-office systems.

Our solution for e-invoicing with eVerbinding, built-in our Collabrr platform, is an excellent example of this. All document handling takes place outside the individual companies, and all workflow tasks concerning the approval and payment of these invoices are automatically done between the knowledge workers. The consequences, expressed only in a journal entry, are automatically settled in the participants' accounts. With this, we now have one of the most important processes in the chain under control.

This can now easily be further enriched with, for example, a 'Procure-to-Pay' (P2P) solution. Furthermore, the digital consignment note could easily be added here as a digital work order. Workflow solutions will increasingly erode the complexity of the traditional ERP solutions to play a smaller role in the future for the administrative recording of the logistic data.

On-premise coupled with cloud apps

Per Gartner's Pace-Layered Application Strategy, complex ERP users can now begin to realize a gradual introduction of new online smart process apps without risks. Often one does not want to dispose of the existing infrastructure immediately. The corporate backend functions within the central system, such as the financial or central MRP run for the master production scheduling, are used longer. These legacy functions can easily be integrated at the business process level with the processes in the cloud. The customer-driven processes, strongly interwoven with CRM and configure-price-quote, are now available flexibly from the cloud but are also linked to the project-driven production control system with which all sites are linked. Obviously, human resource applications in this much more manageable cloud environment are also available.

We have seen the frustrations of extremely expensive conversions from older legacy systems to a newer 'on-premise' version (such as from Baan IV to LN). Often these are functions that have been realized much better in the new technology (multi-company or supply chain collaboration). But even these so-called new versions are only improvements in old applications that still originated in the last century before the internet was used pervasively as a business tool.

The inbound systems are well arranged in the 1st and 2nd layers. An impressive tipping point now arises in the 3rd layer (systems of innovation). There is complete freedom for the workflow apps that have to function in the supply chain. The disruptive apps in the 3rd layer are based on the task of the knowledge worker and no longer on the complexity of the processes in the organization. For example, we solve the challenge to make the business completely digital.

A dynamic case document permanently provides a version of the truth (digital twin). This means that we can now say goodbye to Microsoft's old legacy office, as we did some years ago with Lotus Notes from IBM. Failed SharePoint projects are often a dramatic expense for the organization. The current generation of school graduates can already arrange their collaboration through consumerized devices such as Android.

In this 3rd tier, we have achieved impressive results over the past few years with some large corporations that have already exchanged Microsoft for Google years ago. Some of these apps have extreme data storage because many knowledge workers use this every day. Recently, we have delivered an app that is actively used by more than 80,000 employees and is surprisingly fast thanks to the power of the Google App Engine. Together with our Collabrr dynamic document, the task is to quickly and easily improve processes for the knowledge worker in this 3rd layer.

Decoupling personal data

In this new set-up, it is conceivable to become less and less dependent on the digital giants (such as Apple, Facebook, Microsoft, Google, and Amazon) by storing our personal data encrypted in their cloud's, or decouple some sensitivity data elements in a other cloud or in my on-premise system.

This would mean that nobody would have to have my personal data, but that my workflow system only determines at the last moment who and when should have my personal data. Digital files have then become generic, and only authorized persons can make this specific by linking to my personal data, whereby I, as the owner of my data, can see that I have been consulted on this.

The sensitivity of my data becomes much more manageable. The further the business process or my task shifts downstream to the execution phase (think of a contract or payment), the more valuable the sensitivity of my data becomes. Major improvements can still be made in my data privacy, especially with the improved personal identification and the above-mentioned disconnected personal data. This will also be a very strong tool for cyber security in the fight against criminal attacks.

The breakthrough of Netscape

Things seemed to go well for a while in 1995 when Netscape became a success on the NASDAQ stock exchange with their internet browser. Netscape web browser Mosaic was once dominant but lost to internet Explorer, with its market share falling from more than 90 percent in the mid-1990s to less than 1 percent in 2006.



Netscape created the JavaScript programming language, the most widely used language for client-side scripting of web pages. A direct threat to Microsoft's monopoly position and control of the Personal Computer market with their MS-DOS operating system and the Windows and Office products. Despite their mediocre browser (Explorer), Netscape was removed from the stage, and consumers were completely held hostage by Microsoft for years to come.

Despite this drama for Netscape, the introduction of Netscape to NASDAQ proved to have a huge impact on the innovations of the consumerization of the IT industry. The boom in Netscape's market capitalization has helped Marc Andreessen and the new generation of Venture Capitalists to reinvest those profits in the next generation of IT companies, such as Google, Facebook, Amazon, and Apple, which have developed into mega-billion market cap companies. Due to their extreme successes, the monopoly positions of the traditional business software companies such as Microsoft, SAP, and Oracle have become under an even greater threat by the top digital five companies. (Apple; Google; Amazon; Microsoft and Facebook).

Marc Lowell Andreessen (born July 9, 1971) is an American entrepreneur, investor, and software engineer. He is the co-author of Mosaic, the first widely used web browser; co-founder of Netscape; and co-founder and general partner of Silicon Valley venture capital firm Andreessen Horowitz. He co-founded and later sold the software company Opsware to Hewlett-Packard. Andreessen is also a co-founder of Ning, a company that provides a platform for social networking websites. He sits on the board of directors of Facebook. Andreessen was one of six inductees in the World Wide web Hall of Fame announced at the First International Conference on the World Wide web in 1994.

The five IT technology waves

The picture below shows the development of the extreme increases in market capital of new technology waves. It took many years for **the first wave** of Mainframes to start developing software. Everything went much faster in **the second wave** of the PC.



In addition to Microsoft, hardware companies such as Apple and HP also benefited from this. At the same time, this development also boosted European ERP players like SAP and Baan Company.

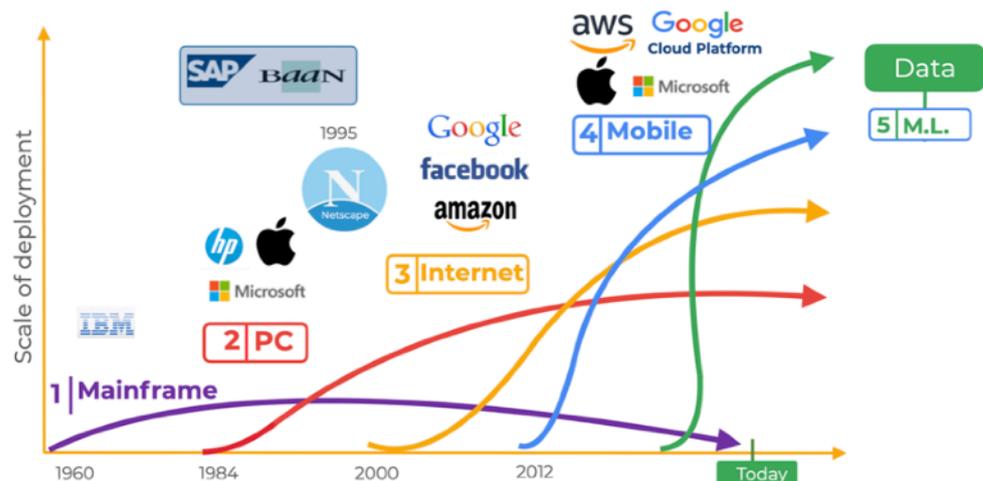
The third wave was mainly due to the financial success of Netscape, a propelling element for the new generation of internet companies. This wave had a faster adoption and created a larger multiplier for the value of these companies.

Then we saw **the fourth wave**, the mobile technology wave. Previously, we had the Unicorns phenomenon, where companies were valued at more than a billion US dollars at

New tech waves are moving quicker with much more influence

According to market- & financial analysts, the **speed and impact** of the technology waves on the organization and the society as a whole is growing exponentially in the last decades.

Every wave is dominated by **one or a few major tech-players**. In the most recent wave, **data** is seen as the most strategic trend.



IPO. We are now in a time where the dreaded five Tech Giants collectively have a value of close to US \$10,000 billion worth on the stock exchange.

Governments are increasingly concerned about this because these global companies can hardly be controlled. The popularity of those giants with the consumer means that the rapid adoption worldwide can no longer be placed under existing regulations.

The spreadsheet below about the enormous value of the Digital Five provides an estimation of the market cap per employee. It is its lowest at Amazon (\$1.5 million per employee), clearly indicating that Amazon scores much lower in innovation power than Google, with a value of US \$8 million market cap per employee.

However, the question remains whether these companies really spend that much money on direct spending on R&D. The currency to buy provides ample opportunity to purchase new innovative technology through refined and smart M&A constructions.

The innovative solutions at Apple lies in the field of smart devices, while Microsoft still has much legacy in its portfolio, especially if we're looking at their Office platform and their ERP portfolio.

Top 5 list Market Cap at December 20, 2021	Revenue / million	Employees	Market Cap/ million	MC/employee
Apple	US\$ 274.000	154.000	US\$ 2.807.000	US\$ 18.227.273
Microsoft	US\$ 143.000	182.000	US\$ 2.431.000	US\$ 13.357.143
Alphabet Google	US\$ 200.000	140.000	US\$ 1.865.000	US\$ 13.321.429
Amazon	US\$ 350.000	1.300.000	US\$ 1.586.800	US\$ 1.220.615
Facebook	US\$ 90.000	45.000	US\$ 928.500	US\$ 20.633.333
Total big five	US\$ 1.057.000	1.821.000	US\$ 9.618.300	US\$ 5.281.878

Google is by far the most innovative company here and is also developing rapidly in its Google cloud Platform, with a range of innovative tools, such as Anthos. Amazon, with its 1 million employees, is primarily a distribution center for boxes. In many ways, a kind of Walmart 2.0. They all benefited greatly from the 4th IT wave, which has brought them unspeakable wealth, power, and fame, but will they be able to keep up in the 5th wave, the wave of Machine Learning?

The fifth IT technology wave

With the breakthrough of Machine Learning as the 5th technology wave, it remains to be seen if these giant internet pioneers can maintain their position by adopting A.I. In this fifth IT wave, the backend systems' data is connected to the front-end workflow for the execution of the tasks by the knowledge workers. This means that with the introduction of Industry 4.0, the visibility of the entire manufacturing process has much improved.

Machine learning and big data will play a big role here. The data from the backend systems were previously isolated in systems of record, as far as ERP legacy systems are concerned. With Cordys, we integrated these systems with the business processes in the 2nd layer: systems of differentiation, enriching data into information for end-to-end business processes.

After that, we focused on big data in Vanenburg for the past ten years, and systems of innovation with semantic data were united into knowledge. In particular, the powerful REST API with stateful objects and stateless connections was of crucial importance in managing the integration with the backend systems in a much easier way in the third layer than before with the SOAP API in the second layer.

Appendix A - Jan Peter Memorial School

Brief History, taken from a business plan few years back.

Jan Peter Memorial School was established in 2003 in Hyderabad, India in memory of our late son Jan Peter. The beginning was small, with 32 poor children, but the school grew to support 520 completely underprivileged children from remote villages of Andhra Pradesh. The JPM School functions under Oikonomos Ministries, registered with the Society regulation Act of Andhra Pradesh as a development Organization. The organization is exempt from income tax and has obtained the right to receive donations from overseas.



Director Dr. Gopalswamy Jacob

Our objectives

- Lead through excellence in the realms of academics, culture, sport, and social service.
- Nurture the individual by providing a relevant, integrated learning environment.
- Provide opportunities to develop confidence, self-belief, and team building.
- Encourage self-control, awareness, and motivation, thereby encouraging empathy towards others and an appreciation of the differences among people.
- Create a safe, supportive, and friendly environment in which justice and equity prevail.
- Promote democratic principles so that democracy is a lived experience based on respect for others and their opinions, beliefs, values, and rights.
- Provide opportunities to exercise initiative and leadership by fully participating in the activities of the school.
- Develop the potential for future leaders and responsible citizens of the country (in areas of social and economic endeavors).



Unique features

1. All our students are 'First Generation Learners.' This education should certainly transform not only the lives of these students or parents but also society.
2. JPM School achieved both top marks in the region and 100% pass record among all the schools in the region.
3. The School inculcates 'Christian Value Education' in a student's life along with the regular curriculum.
4. Along with academic activities, the life skills such as physical education, soft skills, and communication skills are taught.
5. We create awareness among the students about child abuse, child exploitation and teach Child Rights. School also teaches HIV-AIDS, Adolescent related issues to the students.

Our mission

The organization provides free education and lodging on campus for children who are orphans, semi-orphans, and or belong to economically backward sections, an atmosphere that is safe and comfortable for children. The goals of JPM School are to provide access to quality education to marginalized children and equip the children for a social life. As all our students are First Generation learners, the teachers adopt suitable methodologies in teaching them. Apart from regular classes, they also have moral instruction, sports, games, general knowledge, computers, and library hours.

A team of qualified and dedicated staff is serving to take care of the activities in the children's home. They are equipped with the skills to nurture the child with moral and social values. The staff spend quality time with the children before and after school hours and are attentive to their needs by providing parental care and counseling.

Infrastructure and Facilities

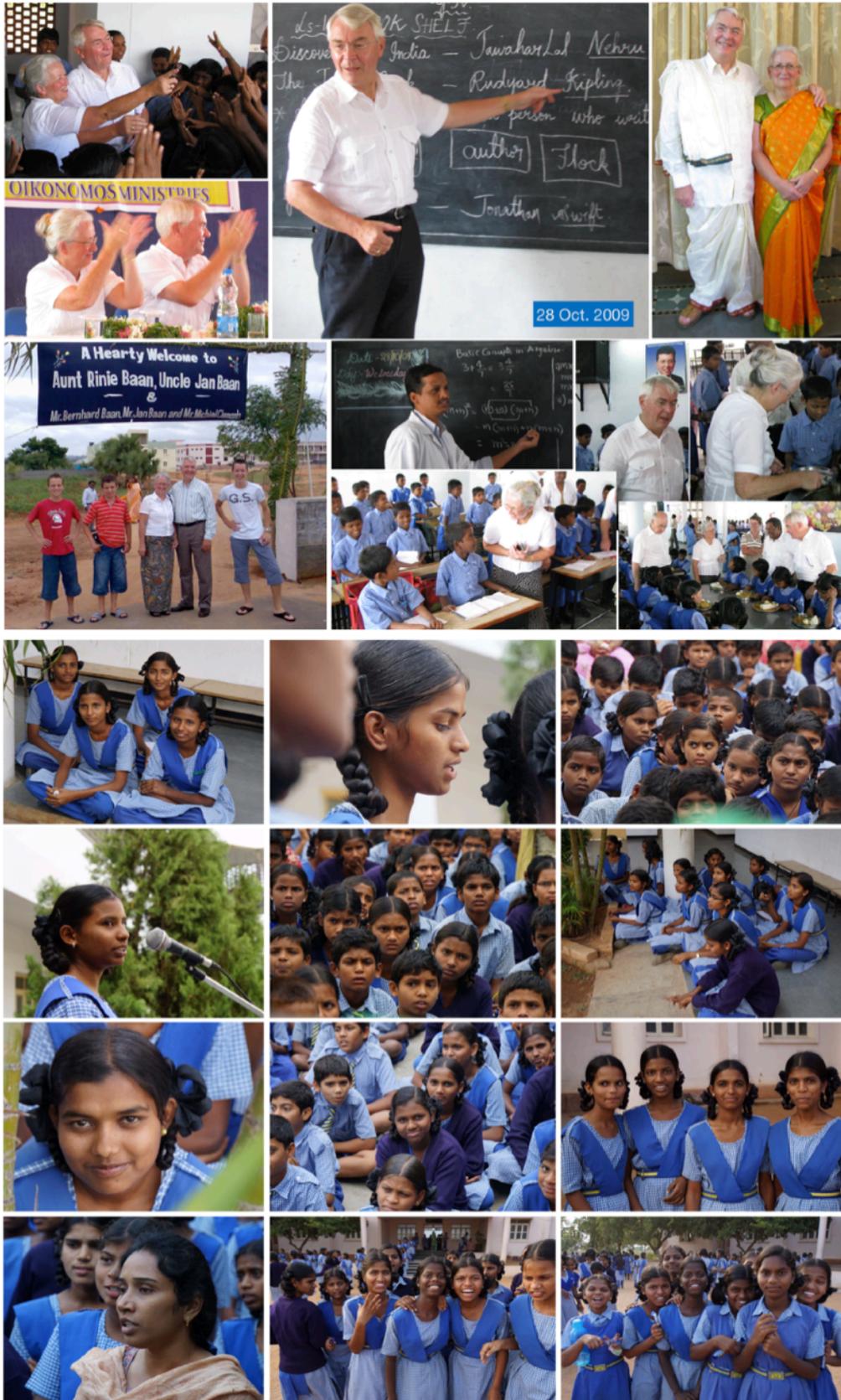
The structure of the school and hostel creates an amicable environment for the process of learning and teaching. Well-equipped laboratories, language labs, audio-visual labs, and computer-aided learning are some of the facilities for active learning.



Jan Peter Children Home (Boys and Girls Hostel)

Our achievements: SSC results 2013-2014

The second graduating class of the 62 JPMS students appeared for the SSC exam conducted in March 2014 by the Govt. of Andhra Pradesh. The school again scored 100 percent success. Out of 62 students 55 scored 9.0 or above which means an 'A' grade. JPM school scored top place among more than 200 schools in Yacharam Mandal.



Admissions:

Students are admitted without any discrimination of caste or creed. JPM School is recognized by the Government of Andhra Pradesh and provides education in English Medium to children who belong to the marginalized sections of society. It is a co-



educational residential school spread over a sprawling 46-acre campus in scenic sylvan surroundings. The entire campus has been conceived to be a Centre of Learning where the best educational practices of both National and International Curricula can be integrated. It is envisaged to bring about transformed members of society through the instruction they receive in Secular knowledge and build them with strong Christian values. Most students stay on campus and are provided with food, and clothing and other needed facilities to develop themselves.

Why our school is selected for the best school and teachers award in the district

The newly formed Telangana State had decided to choose the best schools and teachers and award them on June 2nd, 2015 as its first anniversary of formation day. The government for this selection process set the criteria. Like other schools, we had a visit, and it was the District education Officer (DRO), Mandel Education Officer (MEO), and Principal of one of the other schools. They had visited Jan Peter School in March 2015. They first discussed with me as correspondent of the school, then with the Principal, teachers, and students. They also visited the classrooms, labs, and other facilities available on the school premises.

1. Academic level: They have gone through the records of our students' last five years' academic achievements. They went through the records from 8th grade. They also cross-checked some of the students who went out of our school and verified how they fared in other academic Institutions. Our school always stood first in this Mandel, with more than 110 schools (both private and government). Secondly, some of the students who passed from Jan Peter Memorial school stood top rank in their 11th and 12th grades. One of our first batch students, Yathagiri stood third place in the state in the 11th and 12th grade where more than 1.1 million students appeared. One of our second batch students, Swati scored second place in the school. One Sampath Kumar topped in 10th exams by scoring 10/10 GPS. The Evaluation was done on the CCV pattern (Continues Comprehensive valuation).
2. Teachers/staff: Most of our school teachers are highly qualified and committed to their tasks. There was a good discussion between the visitors and our teachers. They also had a discussion on capacity building, Job safety, workplace policy etc., with the teachers.
3. Much appreciation was given to us due to our networking with Google and NIIT for technology. Our children are allowed to visit google and NIIT. Our children impressed them with their knowledge of technology.
4. Facilities: Both classroom facilities, teacher-student ratio, playgrounds, computer and science labs, counselors, interaction with the students of Theology, counseling groups, academic health environment had impressed the visitors.
5. Our school stood unique when dealing with Child-Protection Policy. It is not only the

policy on papers but also the knowledge the children have on the policy. Children also have a telephone number they can use when they are abused. Jan Peter Memorial school is the only school that makes Child Protection important legally as is evident.

Hence, both Jan Peter Memorial School and its Principal are selected as the best school and best teacher of this region.

Hyderabad, January 18, 2020

On Saturday, I had the privilege to meet a large portion of our Jan Peter Memorial School alumni, in Hyderabad India. In 2003, 32 children from the first batch started here, the very poorest, who normally had little chance of good education. The school has grown to 640 students in 6 years. Starting at the age of 4, they will spend up to 12 years at our school. We adjusted our policy in 2009 and concluded that after-school training could be better value for money. In 2018, the last children of the last batch, left with their diplomas and a good grade list.

The week before my visit, we spontaneously sent an invitation for a reunion on the Oikonomos Campus. Surprisingly, 240 children showed up. We had an excellent day. To them, I am their Thathaiah (Grandpa). It seems that they all have ended up well. Some are working in IT, involved with REST containers, or making C ++ connections with the Internet of Things. Most had the prospect of a bachelor's degree or had completed their studies with it. A real joy to see that the costs for these poorest people have yielded an unprecedented ROI (Return on Investment). What a joy it is to be able to give something back from the proceeds from our software factory in India.

Wonderful to know of this nice contribution from Dutch software entrepreneur Jan Baan to Hyderabad, India. As an Indian, I thank Jan Baan for this contribution to needy sections of Hyderabad.

In the late 1980s, as a Datamatics Ltd. Bombay (Mumbai) employee, I had visited Baan in Barneveld, in the Netherlands to study a Window Manager related project for a few months. Great to see that the same person now is contributing to Telugu needy society.

A recent article on LinkedIn by Jan Baan talks about the 'Jan Peter Memorial School' in Hyderabad and recent alumni meet where 240 alumni showed up. This school seems to be a charitable school funded from the proceeds of Baan's India software factory.

The article says Jan Peter, son of Jan Baan, died in Nigeria in 2003 and that this school is in his memory. Jan Baan says that the alumni of this school refer to him as 'Thathaiah' (Grandpa in Telugu)! I was absolutely fascinated to know this. I think the IT connection between India and the Netherlands has had a very interesting cultural connection between the people of the two nations too!

Ravi Ravi S. Iyer

Social media writer. Retired international software consultant

Appendix B - media interviews

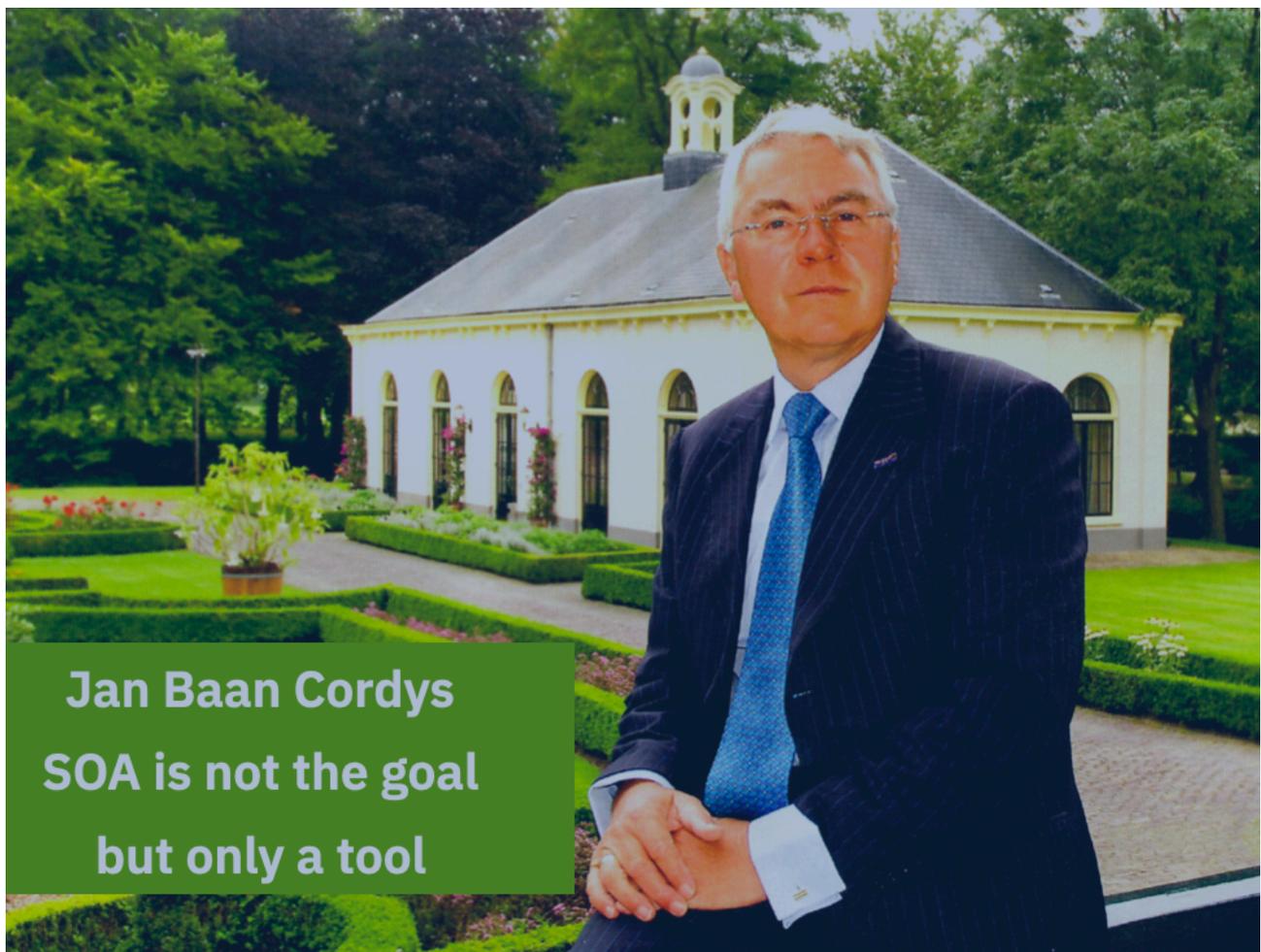
Business Process Magazine: SOA is not the goal but only a tool

Oktober 2007 - Robbert Hoeffnagel

SOA-suppliers do not provide BPM

Jan Baan about the uncomfortable relationship between BPM and SOA
Forrester-Analyst Connie Moore recently expressed some criticism of the providers of integration software in business process magazine. They would have stolen the term 'bpm' and pasted the label on products that cannot claim that at all. Jan Baan from Cordys would like to respond to that comment. He fully agrees with her criticism. But it requires additional information.

Maybe not everyone had noticed, but there is significant displeasure in the world of Business Process Management. Several analysts have a conflict with suppliers of integration software. The latter group claims to deliver BPM solutions, while analysts mainly see these SOA providers as companies that develop technology that can integrate applications, having little to do with BPM.



Human-centric BPM

Some analysts are using fighting words to make their point. For example, Connie Moore by Forrester - with seventeen years of experience no newcomer in this world - recently stated in Business Process Magazine that suppliers of integration software would have stolen the term 'BPM' itself. The abuse they make of this term has even made it necessary for her to come up with a new set of names that must make the world of BPM clear again. And so Forrester now uses terms such as 'human-centric BPM', 'document-centric-BPM' and 'integration-centric BPM'. And even the term 'collaboration' we come across. All of them BPM solutions, but all very different. What about SOA suppliers such as webMethods, Bea or Cordys? Until recently, they provided SOA products, but they are gradually trying to make the switch to BPM. According to Moore, however, they are especially good at integration of information systems at the transaction level. From a technology standpoint, we ended up at BPM, but their thinking about processes is very different from what we are used to in the world of business processes.

That required an explanation. The word 'process' in particular requires a clarification. Many suppliers of integration software focus on the processes that can be modeled in advance and in particular applications that invoke and update other applications. The input of humans is relatively small and is primarily aimed at responding to exceptions for which no ready-made process steps have been devised in advance. It is therefore more about linking existing systems together. However, that is only one piece of the puzzle. Of course there are also processes which have an ad hoc nature and cannot be fully modeled in advance. These are processes in which the human role is significant and where the term 'collaboration' has a human-centric nature. This approaches the vision of analysts such as Moore, with the 'real' BPM: 'Human-Centric'.

Delete

If it is up to Jan Baan, we can confidently remove Cordys from the traditional SOA suppliers list. According to the founder and CEO, his company does not produce SOA products at all. At least, no SOA in the classic sense of the word. Baan emphatically distinguishes between two generations of SOA. 'The first generation was purely focused on technology and integrating all kinds of previously separate applications and systems.

In his eyes, that is the phase in which most SOA suppliers are still operating. However, Cordys is one step further, he believes. 'In our vision, there is also such a thing as a second generation SOA'. Although we continue with SOA as a technical solution, it is mainly about designing the business processes that make use of all that underlying functionality. Also those Human-Centric processes that Connie Moore talks about. Or as we say: it is not the SOA mailbox that takes care of the integration, but the business process. SOA is no longer the goal, but only a tool to make BPM possible.'

Good news

What Baan actually explains: 'We are in both categories.' Cordys does indeed offer classic SOA products as an Enterprise Service Bus, but with focus on vision and R&D mainly around BPM, but based on SOA principles. That may also explain why Cordys had some remarkably positive news coverage in recent months. The company recently raised an amount of no less than 80 million dollars from Venture Capitalist Argonaut, who took an interest of 25 percent in Cordys. With that investment, it would be the largest financing round the BPM market has ever known, the company reports with pride. In the coming months, the money is particularly allocated towards further expanding the presence of the company in the United States.

The foundation is formed by a so-called real-time SOA grid

In addition, analysts from Butler Group and Gartner, among others, are very positive about Cordys. Michelle Cantare, vice president of Gartner, is known to be very enthusiastic about Cordys as a BPM company. It is part of a list of five providers closely followed by the agency. In addition, Rob Hailstone from Butler Group uses words as 'exceedingly strong' in his analysis of the 'Cordys BPMS' product. Also, Cordys recently appointed a new Chief Strategy Officer in the person of Jon Pyke. For those who do not know him: he was previously CTO of Staffware (nowadays part of Tibco) and once one of the founders of the Workflow Management Coalition (WFMC), a 15-year old organization that brings together suppliers, users, researchers and analysts in the area of workflow management and business process management. It is the club that is - among other things - responsible for standards such as WD-XML and XPDL.

Spreadsheet

On what facts does Jan Baan base his opinion that Cordys belongs in both SOA categories and is actually more a BPM provider than a SOA supplier? To answer that question, Jan Baan powers up his notebook and starts an extensive presentation about the technology of Cordys and the background of the company. In addition, he regularly refers back to the times of the old Baan Company. He sees a logical progression that runs from the old business information systems where everything revolved around data records, to modern times. He jumps from slide to slide and regularly opens up new presentations to be able to further illustrate his story.

The Business Process Composer designs the processes based on services

Former ideas from the Baan-era are regularly displayed on-screen, such as the former Dynamic Enterprise Modeling (DEM) tool, for example. This is followed by lessons he has learned from other people. He does a deep-dive into the technology, and comes up 'above

water' again at what he calls a 'spreadsheet for business operations,' This allows an end user (according to analyst Moore we can better call them 'people') to compile his or her own work process completely autonomously.

In other words: 'ad hoc' business processes. That is possible because our 'spreadsheet' makes it possible for the user to call all kinds of external services. Moreover, if available as a web-service, multiple forms of collaborative services can be added. Consider Instant Messaging, or collaborative use of digital whiteboards and the like. As Baan says: 'In the web 2.0 interface, accessing user work processes becomes as simple as accessing a link that – in the background - is connected to a piece of logic in a legacy application, or a VoIP line, or a chat box, or an external shipping service that gives insight into when a courier comes to deliver a shipment.'

Learned lessons

What are the lessons from the past from which Baan has learned, and how do they apply to Cordys? 'We have decoupled much too little in the past. Everything revolves around data and all that data is stuck in numerous databases. We have cast our work processes in concrete slabs. As long as everything we want to do in business processes is dictated by data, we won't advance them a step further. So we must disconnect them. In the Baan-times we already thought about how we could move away from the complex data models which we used in ERP systems at the time, and that many companies are still using today. At that time, we were one of the first providers to build a construct that we now call the 'Enterprise Service Bus'. Our idea was that this bus had to take care of integration and not the database. Up to this point, many companies unfortunately have not advanced one step further. What we have learned since is that this service bus is only a technique that provides connectivity. However, it is the business process that should manage the actual work. Integration must therefore also be arranged at the business process level and not via the enterprise service bus - as many providers of ESB & SOA products still do - because then we still focus on the database.'

If we want to leave database technology as an integration platform behind, we must of course look for new resources to ensure that we do not lose transactions or data. Prior contact with the provider of error tolerance computer systems Tandem has taught Baan how that can be realized. Technically speaking: Work with 'stateful objects' and 'state-Less connections.' That way, the scalability will also increase drastically. Another lesson: Develop an approach called 'late binding' so that logic services can be separated from physical endpoints. It is now an important characteristic of Cordys technology. Even before the turn of the century, I learned from Shai Agassi (known from SAP and as founder of TopTier, a company in which Baan had a majority stake and that later has been sold to SAP) the importance of the browser as a user interface.

Real-time grid

Baan now explains a number of well-known names from the industry. All those lessons have laid the foundation for what is now Cordys, he says. The foundation for the Cordys products is formed by a so-called 'real-time SOA grid'. This is in fact an Enterprise service bus that takes on the tasks of both an integration broker, an application server and Message Oriented Middleware. 'For a good BPM solution you need more than just tightly or loosely coupled integration of applications or a hub-and-spoke or peer-to-peer communication architecture. Anyone who really wants to be flexible will have to have it all. And we do that with our real-time SOA grid. It ensures that legacy applications and web services can be integrated with each other.'

In 'Cordys nonstop', among other things, the ideas of Tandem can be found. Given that it manages all 'single points of failure', Cordys nonstop ensures the error tolerance desired in a BPM environment. This is an important point, believes Baan, because it was previously the databases that ensured that data could not be lost. However, now the business process has taken over the central role, which means that another solution is required.

BPM, CAF and BAM

On top of it all sits a BPM layer. This is what it's all about, Baan now states. Cordys BPM uses the BPMN standard for modeling processes, and BPML for the running thereof. This has not been chosen for the more conventional BPEL standard that BPML can now be generated one-to-one from the BPMN model, allowing a richer workflow functionality. Cordys captures the conceptual definition and implementation in one model. In this way modeling and execution is combined in one model, so that round-trip problems are prevented, Baan says. In addition, there is a separate business rules engine, so that business processes and business rules can be separated from each other and therefore processes are not unnecessarily complex.

Cordys-CAF and Cordys-BAM are also interesting. With the Real-Time SOA Grid, all kinds of systems, applications and web services are accessible and made available as services. The Composite Application Framework (CAF) offers a series of tools that allow both users and so-called 'business process composers' to get started with these services to put together processes. In this vision, the composer is an official who is on the business side, but who must have a certain technical affinity.

This official may, without having to program a single rule or line of code, assemble processes from all legacy applications, web services and the like that are made available through the SOA grid. In addition, this official is developing a library together from services that can even be called by users.

Also ad hoc processes

'The Composer plays a leading role for all processes that have a rather static as opposed to a dynamic character. Through change management-like procedures, these processes can of course be adapted to changing circumstances, but this is usually not a frequent occurrence. So these are the processes that have a little more of an integration character and fall more in the classic SOA corner.

But as Connie Moore rightly noticed, there are several types of processes. In particular the ad hoc assembly of processes was quite difficult so far. But we can solve this today with what we call a 'spreadsheet for business operations'. Here too, 'zero-coding' applies. It is the employee that, based on the situation that occurs at that time, decides on which steps to take. In addition, he or she can use the library assembled by the Business Composer with services, or search and include suitable web Services in the process. Of course, agreements are needed for this - what is possible and what is not - but that is something that every organization will have to arrange itself. Everything is done on the basis of the AJAX programming concept, executed within the browser. The last component that Cordys offers is Business Activity Monitoring (BAM) that can provide insight into a number of data on the various processes.

Trial

With this, Cordys strives for a three-pronged approach. First of all, there is the IT department that provides all applications and information systems and makes them available as web services. The Business Process Composer designs the more strategic and complex processes based on those services and assembles these into a library of services. These services can subsequently be invoked by employees themselves and possibly combined with other services.

'With this approach, the development and management of business processes happens at the point of the end users and therefore not at the IT department, where it takes three months before a few screens have been adjusted via all kinds of programming work. The business is now leading and makes optimum use of services that are made available by the IT department, supplemented by webservices made available via the internet.'

Jan Baan then puts down the mouse with which he has made significant markups on the screen. 'I agree with Connie Moore when she says that many SOA suppliers are wrong to use the synonym BPM. But I also hope that it is clear that we do it differently. And don't forget one thing: this is not just a vision. Cordys can deliver this functionality today, while more than sixty other companies are just now getting started.'

'A clear set of core values will always pay off. But not always tomorrow.'

When hearing the name Jan Baan, in the first place most people think about his former company Baan Company, which experienced an impressive growth in the 1990s but also an at least as sensational collapse at the end of this decade.

What most of these people do not know, however, is that, since 2001, this passionate and innovative entrepreneur has been very busy building a new company in the field of IT and management information systems: Cordys. He welcomed Asset Magazine at Castle the Vanenburg and after we spent some hours with Jan Baan, one clear conclusion can be drawn: Jan Baan is clearly not done yet and still full of inspiration!

Vision on Sustainability

'In my opinion sustainability and corporate social responsibility boils down to one simple thing: having an added value for society. This is the key element of sustainable business. Of course, you may also taken advantage for the business yourself, but when you are really the only one who benefits from it, you are not acting responsibly.'

'For me, sustainable behaviour means that you are motivated by an attitude of desiring to improve and to contribute. Sustainability has nothing to do with a soft mentality, which for example aims at strictly minimizing the amount of air pollution. Quite often I travel by plane, but I can do this without a sense of guilt. Why? Because I think that, although I am indirectly polluting, my net contribution to society is still significantly positive. It is all about trade-offs and optimisation. Prime-Minister Balkenende could also go to work by bike, but then he will be two hours late, missing many important appointments; that is clearly not optimal.'

'A mistake I made myself is that I moved from customer-driven to shareholder-driven business with Baan Company. And that is just a very mediocre way of thinking. Perhaps almost everyone thinks that way, but by restricting yourself to the interest of only one party, the concept of sustainability completely disappears. By merely focussing on shareholders value, a greedy train of thought is created, in which everybody only worries about the next quarter financial results. Unfortunately, we have overshot in this direction during the last decades.'



A **mistake** I made myself is that I moved with Baan Company **from customer-driven to shareholder-driven** business. And that is just a **very mediocre way of thinking.**

The future is cloudy

‘Since I started as an entrepreneur in 1978 my principal motivation has always been the question: could we not improve all those administrative processes within the business? My dream was to put business processes central: IT does not matter.... But business processes do!’

‘However, although we have been talking about Enterprise Resource Planning (ERP) systems for decades already, there has never been a real linkage of separate information systems. But now there is the internet, offering an enormous amount of new opportunities. Nevertheless, we are still not utilizing the full potential of this technology and that is exactly where Cordys comes into play. We want to go beyond ERP and contribute to a new IT. An IT that helps people because it improves business processes in a revolutionary way. This new IT comes down to using the Cloud.’

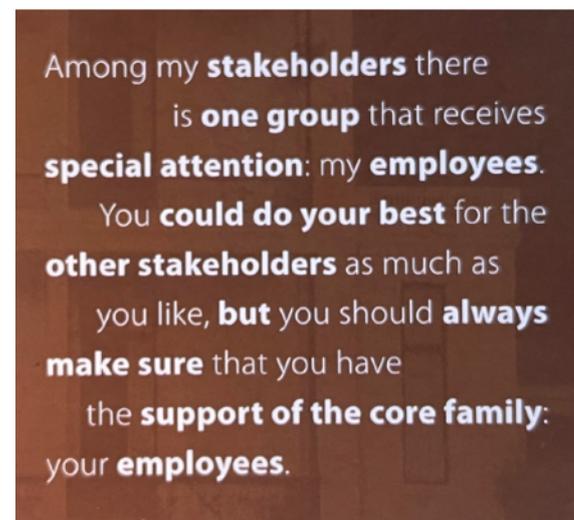
‘Let me explain the concept. At the moment, the IT departments of companies are extremely severe pollutants; even the dirtiest chemical factory you could imagine pollutes less per squared meter. This is all because companies adjust their IT capacity to the peaks in their IT usage. Interpay (a payment processor, taking over by Equens, which takes care of all electronic payments in the Netherlands), for example, bases the size of its IT capacity on the amount of IT they need at Christmas Eve. This means that during the rest of the year perhaps only approximately 6 percent of their capacity is used, as all fileservices are running 24/7 anyway. It would be more efficient to buy IT capacity from others who have a surplus capacity when you need it. In the past this was not possible, but now the internet has made this possible. This is the key principle of cloud companies making use of shared

IT capacity. And using this central capacity, all kinds of existing systems and applications can be linked and integrated, so everyone can furnish their own systems.'

'In short, the cloud can thus improve many business processes, by linking and integrating them. Think about what this could mean for the way we are doing business! The cloud is also sustainable: it is green IT, as we can save much energy by sharing IT capacity. So by offering our Cloud-related products we are contributing to society: by drastically diminishing the cost of IT use and pollution, but also by expanding the benefits of IT as a result of the organization of business processes.'

Stakeholder-driven organisation

'Besides supplying a sustainable product, we also want to organize our company in a sustainable way. Therefore, we want to be stakeholder-driven, instead of shareholder-driven; we try to act respectfully towards all parties involved in our company and to pay as much attention as possible to their interest. And in my opinion the customer is our most important stakeholder. In the end the customer pays the bill and thereby grants the right of existence to your company. Therefore, the customer should in any case benefit from your product in the long run; you should contribute to the customer's value proposition.'



Among my **stakeholders** there is **one group** that receives **special attention**: my **employees**. You **could do your best** for the **other stakeholders** as much as you like, **but** you should **always make sure** that you have the **support of the core family**: your **employees**.

'Additionally, we also intend to be a reliable partner for our other stakeholders, including perhaps even our competitors. However, I have to admit that I do discriminate in this respect, but I think that is a natural instinct. I do this even within my family: blood relatives always come first. Among my stakeholders there is one group that receives special attention: my employees. With this group I have the closest relationship and in a certain sense I also bear responsibility for them. However, it is not exactly the case that I favor them, as I also force them to work hard for keeping the customer satisfied. This way I am putting pressure on them. In return the personnel should therefore feel that they are part of the family. The internal circle. So, you could do your best for the other stakeholders as much as you like, but you should always make sure that you have the support of the core family. Unfortunately, however, I do have to fire employees sometimes. I always say 'Someone is on the bus or not on the bus', and if I have the feeling that someone is not on the bus, I will have to fix this problem as soon as possible. That is a matter of integrity, honesty. Otherwise I am wasting his or her time and also mine, to support the losers instead of the winners of the company.'

Core values

'I think it is crucial for a company to have a set of core values, a culture, an ideology. This ideology should actually be chiseled out in stone; you really should try to hold on to it. If you do this, you can act much more flexible in the uncertain and dynamic outside world. Often, people think that this conservatism in ideals and progressiveness in execution can not go hand in hand, but the opposite is true. The art is to be idealistic and pragmatic at the same time. Sometimes people also think that a strict set of core values is an impediment for competing successfully in this globalizing world, but again: the more it looks like an impediment, the more it is in fact a key advantage. A clear set of core values will always pay off. But not necessarily tomorrow.'

'One of our core values is formulated as 'share innovation, dare to take initiative and maintain integrity.' I have many extremely intelligent and innovative people working for me. They all have a certain gift, but the real technicians are often not the best communicators. Therefore, I try to turn that introversion into initiative.

Be innovative, but also give initiatives a chance! In order to encourage this, we adhere to principles like 'you have the right to make mistakes' and 'better ask for forgiveness than for permission.' I cannot work with what I call the 'Mother, may I?' mentality. People take the most delicate decisions in their personal life, so why not giving them the authority to take relatively simple decisions on the job? In my opinion there is only one condition: the motivation for their decisions should be the interest of the company, and that is why we have the 'integrity principle'.

Finally, we also attach much value to respect for the individual and we try to protect our employees from becoming workaholics. All of this constitutes an important sustainability issue: protecting your employees.' Such a set of core values cannot be created in one day. They are gradually shaped. For example the consequences of the shareholder-driven structure at Baan Company turned out to be a useful lesson for me. However, that does not mean that I would never again adopt a shareholder driven model. It is very well possible that I will need one in order to be able to create interesting share-option plans, necessary for attracting the international 'wizards' to my company, whom I need for staying competitive at a global scale. So I cannot simply adapt a soft mentality and exclude a shareholder-driven model! The world is not that simple.

Oikonomos

'To a certain extent, however, I am also trying to gain as much money as possible for my shareholder, though this may be a somewhat atypical kind of shareholder: my shareholder is the Oikonomos Foundation, which I founded myself in 1994 and is dedicated to 'development cooperation'. So if Cordys is successful and earns money, I can for example

help some more schools in Africa or India.’ ‘My primary motivation for founding Oikonomos was different however: simply self-interest. I wanted to protect my family against extreme wealth, since I had seen the adverse effects extraordinary wealth had on other people. Instead, all of my children may participate in Oikonomos; though it is not their money, they may use it for doing good and nice things.’

‘Nevertheless, the outcomes of the foundation’s efforts should be put in perspective; in a certain sense the projects are just a drop in the ocean and an earthquake could for example destroy a school in just a second. Should I therefore stop investing in such projects? No, of course not. After all I am also doing it out of an inner drive. For me this drive is stewardship, which, as a matter of fact, also inspires me regarding the way I run my business. A steward is no owner; in fact, it is only a manager, with the responsibility of taking good care of what the owner entrusted him with. And if this is for example an orchard with delicious apples, it is alright for the steward to also eat some apples himself (for example: I am driving a decent car), but he has to maintain the balance. Some Christian people for example, say: ‘You should always give away 10 percent of your income’. But perhaps I should give away 90 percent. If you have a lot of money, you can also donate large sums. In contrast, if you hardly have any money, 10 percent may be far too much for you. So there is always a trade-off. Anyway, I believe that I do have to take responsibility for my trade-offs; every day I should be able to look at myself in the mirror.’

Triumph and disaster

If I have learned anything from my career, it is the following lesson: where everything went fast and smooth during the rise of Baan Company, everything suddenly got slower when the company fell into bad weather. The reason for this was that I constantly had to drag along two people, one in each hand of mine. One of those two I love and caress... But I hate the other one! And miserably, those two persons are actually one and the same: my own ego. Ego: your friend and your enemy; without an ego you have no drive, but mind the one who is slave of his ego! You should carefully try to maintain the balance. Like the Indian poet Rudyard Kipling once wrote:

*If you can dream, and not make dreams your master;
If you can think, and not make thoughts your aim;
If you can meet with triumph and disaster,
and treat those two imposters just the same -
you'll be a Man, my son!*

If you distance yourself from the successes, you may also distance yourself from the failures. It is all about forgetting the successes and learning from the failures. And the art to find a balance.’

Vision is bullshit!

Olf Kinkhorst and Peter Wieringa Tuesday February 3, 2008

Putten - The Reformed Entrepreneur Jan Baan is strict for himself. 'No passion without pain' is his life motto. An entrepreneur Pur Sang wo expected growth for his youngest Technology Company: Cordys.

'I rarely go to receptions,' says Baan in the beautifully restored castle De Vanenburg.

'All those top people, I don't know them. Let others open the champagne bottle when an order is received, I'd rather be an hour earlier to get started with extra energy.'

In his office there is little modern technique to discover. The attention is drawn by seventeenth century paintings by Frans Hals and Jan Lievens. 'Ah, in contrast with my work, I am always busy with old stuff,' laughs Baan.

There is also an impressive collection of old bibles that are difficult to lift by one person. But anyone who thinks that Baan can only express himself in Bible texts is mistaken. 'I know a nice word for vision:' 'Bullshit!' Says Baan. 'Entrepreneurship is just a response to what is over.' Thus the man who started - from his shed - an unprecedented innovative billion dollar company in the Netherlands, that after twenty years already collapsed again.

Who is Jan Baan actually?

Jan Baan seems like an evangelist. 'It's all about Business Process Management now, which is guiding your business execution by using IT. It is no longer the programmer, but the process owner himself, who must be able to shape the desired solutions.

The complexity of IT systems has increased so enormously in the past, that companies simply fail at trying to renew them.'

The Cordys tools replace nothing, but simply connect the databases and the logic of the systems that are already there and add a new dimension, such as the use of Google Maps and online weather and traffic information. Suddenly it becomes possible to predict the development of traffic jams during the day and to adjust cargo routes continuously.

Delay for customers

You can only make this type of product if you don't care about your existing environment and just start developing the ideal system, explains Baan. 'In the first few years you should not have customers. They limit the progress of your generic system in the beginning. You only suffer from that because they are going to entice you to customize. That generates cash, but it disrupts the progress of your innovation. We need Mass Customization, or a

system that is so flexible, that individual adjustments are disconnected from your generic system.'

IT service providers begin to see that they can do something with this new software about the uncontrollable government and business systems. The customization of years has ensured an unmanageable mess. Failures to renew those systems lead to blame games and significant financial damages, Baan does not understand all that customization. 'The government does not let any special government cars be built? Whether there are customized spark plugs?'

In short, there is a market. In the meantime, Cordys has customers worldwide. 'We have doubled the turnover continuously. I still don't mention amounts, but this year we hope to reach the break-even point. There is also a new Boeing to arrive.' Nevertheless, Baan does not see this as personal rehabilitation. 'No, it's not about me, your ego must always benefit the institute. In fact, I am no more than a steward, I try to get social benefits.'

All in line with his Reformed conviction. But about your faith, has that never been shaken in those dark days? 'Your faith wavers every day! You swing from total doubt into total trust. That is why I meditate half an hour every morning. At the end of the day there are always many disappointments. But I also believe in grace. So I find inspiration in this painting by Lievens behind me (the grieving prophet Jeremiah). You see the pain and wisdom in this portrait of a prophet. That is art which Calvin also should have loved. No passion without pain.'

New Business: 'Mobile is the new pc'

Bizz Management June 2010 - Huib Hike

'The innovation is the next generation business'

The way of doing business is going to change drastically. And, it will not take much time! In a year or two, says Jan Baan, CEO of Cordys, entrepreneurs dispose of more information than they had ever had. 'This will be the computer, central to everything,' says Jan Baan while picking up his cell phone.

Baan Company was once worth more than \$12 billion, but it fell apart after 1998. 'Yet the Baan products are still at the core of the American ERP vendor Infor ', Jan is emphasizing. The office of Jan Baan, the man behind Baan Company, is seated in the beautiful Vanenburg Castle in Putten (the Netherlands). Magisterial men painted with millstone collars are hanging on the walls in his office. We are sitting at a 17th century table.

It does not seem like the setting for a conversation about the innovative platform that employees of Cordys (a group of 500 employees with 300 Engineers in India) have been developing for years - the first few of these years without customers! Around 250 million euros has been invested so far. Baan shrugs his shoulders about the contrast. 'I appreciate both the old and the new. It keeps me in balance.'

Baan again reaches for his cell phone. 'From a business perspective, this is my most important device. If you lose your bank card, you respond slower than if you lose your mobile phone. It is something personal, to me it is also the only gateway to all business information. The trend we will see in the coming time is that the mobile phone is the central place where all information comes together.'

Don't you get overkill with information?

'You don't have to be afraid of that. When I go to Amsterdam, I don't walk into all the stores either. You should not worry about what you don't know. Enjoy what you do know. That is more valuable. The little bit that you know is already more than you can process,' says Baan, who caps off that statement in the Bible in Ecclesiastes 1:18: Because in much wisdom is much grief, and increase of knowledge is increase of sorrow.

Commodity

'Innovation can also mean increased usefulness. What is useful about the mobile phone? That is that it is a commodity. It does not have to cost a lot. We live in a world where a lot of things are offered and commoditized. Ford has commoditized the car. We now see that IT is democratized. What do I mean by that? If you wanted to work with professional systems in the past, you were privileged because you were an employee of Unilever or Philips. Those companies can afford to pay more than 1 billion a year to IT. What you now see is that employees at their desk have less modern equipment than children at home. You can buy a new Apple device or other modern consumer equipment for home use, while at the office you are often stuck with outdated equipment.'

What is wrong with the current situation?

'Innovation is the Next Generation Business. This market is all about 'new' and 'collaborative'. We work in a group. An example: We had the internet in the past, and sent each other emails. That time is over. Our children no longer do that. They are on Twitter or WhatsApp. We are now in a Google world and I don't send emails in that world, but I invite you to collaborate. We call that a cloud or wave. A wave as an information flow starts and ends again. You communicate together around such a wave. That is much more efficient and more practical than sending each other emails.'

'In the time of Baan Company I started building software for specific business areas. Financing, distribution, sales. And then everything came together. They called that ERP (Enterprise Resource Planning). I call it today: Enterprise Resource Problems. In fact, ERP has never succeeded as one system. It seems nice, but it becomes more and more complex because everything connects to everything. We succeeded in this at the time by creating a very nice solution, and Boeing has thanked us for doing this. That was our software used by 40,000 employees to build planes and collaborate on one system. Everything was combined with everything. Boeing could keep an eye on its planning, and they knew what had to arrive when, so they could plan production and forecast payments. But frankly, it became too complex. Today, we call that: 'The Mother of All Complexity.'



Lesson from Jan Baan

Baan has had the necessary business for choosing. Does he still have an advice for colleague entrepreneurs? 'The lesson for me is that entrepreneurship is not something where you try to understand everything very tense. It is more of a handy that you know to crochet on what is over. It is more about learning yesterday's mistake than developing a huge vision for the coming years. Do better what you're good at.'

John the Soldier

According to Baan, the problem is that heavy projects become increasingly complex and the old way of thinking about software is no longer sufficient to tie everything together. According to the CEO, we can relax with groundbreaking software like in the Netherlands. Baan: 'You have a few large projects in the Netherlands which almost do not occur in business. Whether it is Rijkswaterstaat or the tax authorities. There are some special major projects which normally do not occur in business.'

You could create those opportunities for innovation in the Netherlands. But the opposite happens. For example, the Ministry of Defense. They have opted for the logistics solution of SAP, which has a complex logistics product, and cost € 20 million to purchase the software. Defense is very dependent on logistics. So it seems obvious that they take SAP as a starting point for logistics. They then start to customize it, as a specific solution. The reality is that the customization has cost almost 300 million on top of the 20 million with which they started. It is expected that it can go to 1 billion euros. But it offers no specific information

for the field. What I would like as John the soldier is that I have been informed at least one hour earlier than Al Qaeda. And...That is possible!' Baan waves his cell phone.

What is your innovation?

'In Cordys, we have invested for ten years, around 250 million euros. We have largely invested this money ourselves. What do we see? Strategy must be faster and the operational side must also move faster. So I want to be able to change quickly, but the old infrastructure is super slow. That old-fashioned infrastructure sometimes needs ten years to change. The customization is all handmade, done by people who build their kind of spaghetti-code every day, and complex structures are even becoming more complex with outdated technology. What we have done is build a bridge between the new and that old world. The old layer - SAP, Oracle etcetera - keep it intact. However, we place the business processes central and I'm adding (together with this structured legacy data) the new unstructured world of Google as addition to the structured data. The user can suddenly get all relevant data from those old systems with all those new web pages on one screen.



I leave all subsystems intact and bring all information together in one business process. I can see that on my mobile device. I may want to see information about my shopping or how the process runs from order-to-cash. We link all kinds of platforms and databases from the old world. We now connect structured data with the world of unstructured information.'

What does the entrepreneur in SMB's have this?

'For the first time you can not only see the information from your own company, but also from all other companies in the supply chain! For example, the suppliers of the supplier of your supplier. Linking the information of these companies is much simpler than the complex processes within the company. Because I just need to know from the supplier if I can access his stock information so that I can adjust my production process. I don't have to keep a large stock myself because I can fine-tune my inventory as-needed in near real-time. What we are now seeing is that the entrepreneurs can communicate across systems from several companies in the supply chain. Because of our software, we ensure that the subsystems can talk to each other. And because we can now see everything from a

customer within the company, that customer can also participate in the System of the Supplier and so on.

'The business becomes open. With openness there is much to earn.'

That is a huge jump in innovation. For example, if we only talk about logistics, we talk about a market of a few trillion euros. Why do I have to go from A to B? Maybe I can transport much more efficiently. So actually, inventory is replaced by information. I have to manage uncertainties in stocks. In the world of yesterday that is only true within the company. Now, especially with mobile technologies, we can process all information from all companies in the supply chain. I can see, for example, whether a customer has paid his account, but also where he lives and what revenue I get from that customer. That could be a reason for the driver to deliver to that customer earlier or later.'

And if I get the door to the outside out?

'That's the core issue. A customer only wants to do that if they can earn more. If I know that we can earn a lot of money together, then you can have a virtual look in my warehouse. That will be tied to conditions, but that doesn't matter. I only see what is in the shop window. But maybe later - if there is a little more trust - I look at it and see that the supplier will have problems if I order something now. Business information is readily accessible and a lot can be learned and earned with openness. By closing off information in the supply chain, uncertainties in inventory availability will end up costing both parties a lot of money. There is a lot to save; I estimate 40 to 60 percent and that means we talk about hundreds of billions of dollars. It also means a lot of opportunities for Small & Medium Enterprises (SME). They will no longer be dependent on the larger companies that first only kept information to themselves.'

So it's actually a new version of the Old Boys Network?

'Exactly, but virtually. I will be linked with everything. But maybe I only want to be linked temporarily because of a freight issue or a certain project. I have seen that need before. We require social networks per process. What I do now is translate everything into a process. We want to deploy the commodity technology from the business to serve the business processes. The expectation is that one billion people will simultaneously use a common network and spend two trillion dollars at the same time. Our strength is in bringing the old systems together with the Google world. We're working with two very strategic partners for this: Cisco and Google. Cisco's router will soon be able to have our technology embedded. The monopoly of Microsoft will soon be over. Developers who can make this happen are currently still scarce and considered front runners. It is really difficult. The fax was suddenly gone. But two years later replacement technology is commonplace.'

