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Teaching case

Corporate IT transformation at BARCO

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Abstract

The case takes us back to 2009, a year of great turmoil and the start of a transformation journey for BARCO, a global visualisation solutions company. Stefaan Kindekens, newly appointed corporate CIO, is preparing the new IT strategy per request of the board of directors. At the heart of the proposal are the introduction of a new IT operating model and the replacement of the legacy systems landscape. The case allows for discussions about business and IT alignment, IT strategy, and IT governance.
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Introduction

Stefaan Kindekens, the recently appointed Chief Information Officer (CIO) at BARCO, felt confident, yet, understandably, a bit tense as well. It had been 100 days since his hiring in September 2009. Stefaan was about to attend his first Board of Directors meeting to present the initial findings of his information technology (IT) assessment exercise as well as an IT transformation strategy that would enable BARCO to resume growth and restore profitability. BARCO's business had been hit hard in 2009. In the annual report, the CEO summarised it like this:

> At the end of 2008, BARCO moved into the crisis with a heavy cost structure and a potentially weak balance sheet. […] When the economic crisis fully struck, declines in the events and the out-of-home media markets confronted the company with potentially huge losses and significant write-downs.

BARCO's leadership had reached out to Stefaan partly because of his extensive experience with IT-enabled business transformations at his former employers. At the meeting in December, the Board was expecting him to explain to them what needed to be done with IT and how to proceed – preferably using a language that they could all understand.

The IT situation had clearly been more challenging than initially thought. With the benefit of hindsight, Stefaan commented:

> I had little idea how serious the situation really was before I started. Which was probably a good thing!

BARCO: Visualisation technology leader with worldwide presence

BARCO,[1] with headquarters located in Kortrijk, Belgium, is an international high-tech electronics company. BARCO develops visualisation products for various markets including digital cinema, medical imaging, simulation and virtual reality. With four core divisions (entertainment, healthcare, control rooms and simulation, and defence and aerospace), BARCO is present in more than 90 countries. Their flagship products include digital projectors in movie theatres, display cubes in control rooms, and displays in air traffic control systems.

Lucien De Puydt founded BARCO in 1934 in Poperinge, Belgium. Originally specialised in radio assembly with parts imported from the United States, the company name is an acronym for *B*elgian *A*merican *R*adio *Co*rporation. Following great sales success during the World War II era, BARCO started investing in a diverse set of technologies, such as television, studio monitors, and an automatic control system for a leading Belgian weaving loom manufacturer. These technological innovations drew the attention of an international customer base – and by the 1990s, BARCO was a truly global company with local offices all around the world.

BARCO's mission is to 'create value through the design and delivery of superior and user-friendly imaging solutions to selected professional markets on a global basis'.[2] One of the company's important strategic tools for accomplishing its mission had been a long series of acquisitions, which helped BARCO reinforce its global position in the rapidly converging video and lighting markets. By acquiring several leading technology providers, BARCO obtained their products, intellectual property (IP) rights and expertise with the purpose of

broadening its offering, strengthening its position in selected markets, and continuing its growth as a company.

2009 – a challenging year

2009 – the very year the company planned to celebrate its 75th anniversary – proved to be one of the most challenging years ever for BARCO. That year, the global financial crisis hit the markets hard, and BARCO also took quite a beating. The Events and Out-of-home Media divisions, which accounted for more than a third of the company's total sales, were hit hardest. These divisions saw their revenues drop by more than half, and they lost significant market share to low-cost competitors. For 2009, the company reported plunging sales and a net loss (see Table 1 for key figures); and investors saw BARCO's share price plummet (see Figure 1 for share prices). (See Figure 2 for BARCO's financial and operational performance indicators compared with its leading and lagging peers.)

Table 1 Summary of Barco's key financial figures between 2007 and 2011

Year	*Sales (in € million)*	*EBIT (in € million)*	*Gross profit (in € million)*	*Number of employees*
2007	736.4	59.7	280.8	3.560
2008	725.3	8.9	245.1	3.522
2009	638.1	(29.5)	168.0	3.217
2010	897.0	45.1	287.5	3.499
2011	1041.2	78.4	312.9	3.507

Tackling the challenge with transformation

In early 2009, Eric Van Zele, a long-time BARCO board member, was appointed President and CEO. Van Zele launched a 3-year transformation programme to get the company back on track creating shareholder value (see Figure 3). In a nutshell, this programme would transform BARCO from a loose conglomerate of quasi-independent product companies into an integrated, business-driven matrix organisation capable of sustained growth and profitability (see Figure 4 for the new organisational matrix).

Repositioning BARCO for the next decade depended on three strategic axes: mastering world-class operations, leading through technology, and nurturing customer relations. In 2009, BARCO cleaned up its balance sheet, reduced working capital, focused on cash generation, and right-sized the operating units. The company also implemented a state-of-the-art financial reporting capability, a key piece of the puzzle.

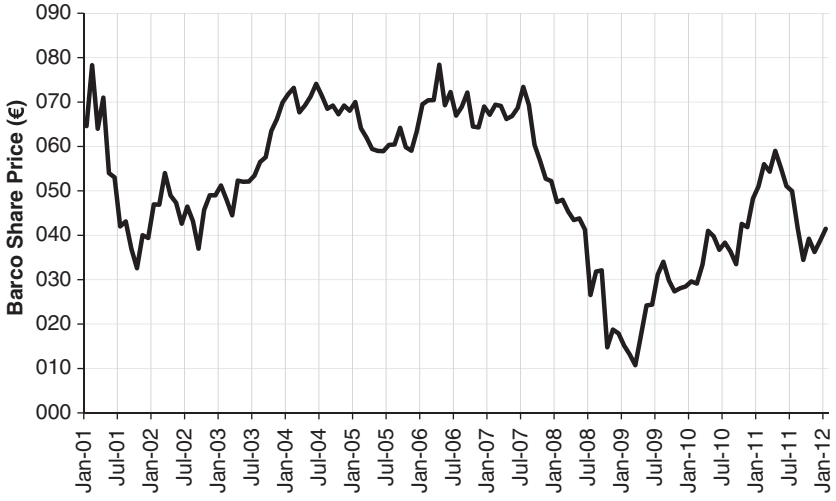

Figure 1 Evolution of BARCO's share price between 2001 and 2011.

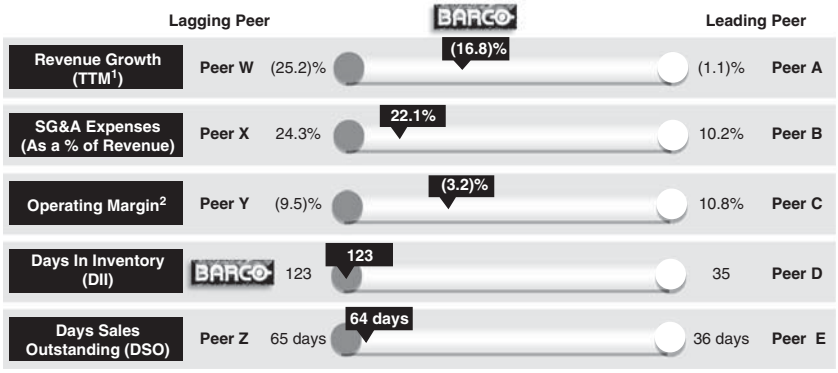

Figure 2 BARCO's performance indicators compared with its leading and lagging peers.

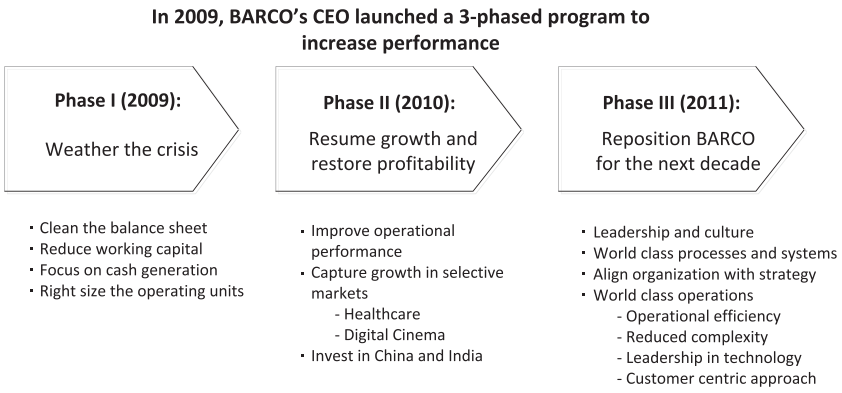

Figure 3 BARCO's three-phase transformation plan.

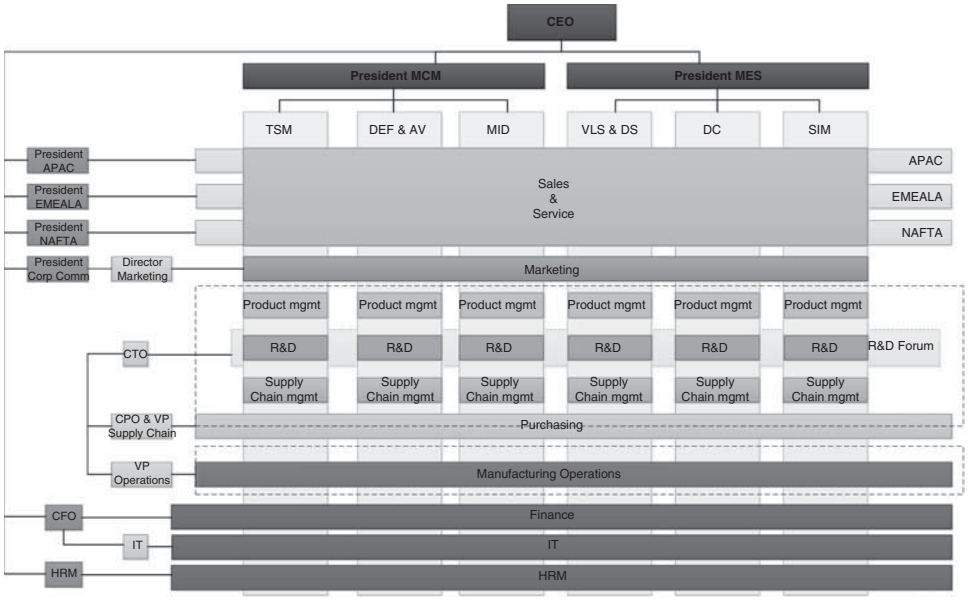

Figure 4 BARCO's organisational chart after strategic transformation.

In 2010, the company resumed growth and returned to profitability. But this required more strategic choices. BARCO reallocated its own resources to core products and selected markets (e.g. growing the installed base in emerging markets), focused on value adding activities, outsourced non-core activities where possible (e.g. billboard manufacturing), and moved more of its own manufacturing to India and China. Finally, BARCO stopped being a hardware-centric company and become a business solution provider.

Organisationally, BARCO created regional organisations, thereby reducing selling, general and administrative (SG&A) overheads. In the new structure, sales force and service staff would operate closer to the customers. Multi-national companies were supported with global account management. Despite the regional structure, it was imperative to provide a professional and global customer service capability. Two operational groups of divisions were created with a focus on technologies and products. The ambition was to create Research & Development (R&D) scalability and stimulate innovation through IP connectivity. The technology divisions would aim for global leadership positions in selected areas and be supported by a strong divisional strategic marketing. A single operational back-end structure, including IT, would need to be established to serve the various businesses with common business processes.

The new CIO

Stefaan Kindekens, an applied economist by training, had gained extensive experience with IT-enabled business transformations before joining BARCO. At Procter & Gamble in Belgium, he had been part of the core team that transitioned the old mainframe accounting system to an early version of SAP R/2, a real-time enterprise system[3] software package. He then continued to develop his knowledge of enterprise systems as the project manager in charge of implementing the Global Core Financials template of the SAP R/3 environment for the Coca-Cola Company. He acquired consulting experience during 3 years at KPMG as Delivery Director for SAP. Finally, he moved on to become Managing Director at Cernum, a privately held SME (100+ employees) specialised in SAP consulting.

When BARCO reached out to him, Stefaan knew very little about the actual state of the IT landscape at BARCO. But it

was clear that he would report to BARCO's Chief Financial Officer (CFO). Stefaan comments on their first meeting:

> The CFO told me that BARCO had not invested a lot of money in IT the last couple of years. They had simply kept the lights running. The Board had little idea where to go with IT beyond that it would have to change radically if it was to contribute to the company's turnaround – which was paramount. The CFO told me that, given my experience, they were counting on me to make the right decisions and come up with a plan to make it happen. Except for that, we didn't discuss IT very much. I spent most of the time listening, and absorbing the strategic changes the Board had in mind for the company.

Stefaan also met with some of the other c-suite members to get a better feel for the company and its leadership. Everyone seemed to agree that IT was 'a real problem' at BARCO, but there was little consensus about what exactly needed to be done. What was clear, though, was that most of the executives regarded IT as a necessary cost of doing business rather than a strategic asset. When Stefaan met up with the CFO, it was clear the latter had taken a personal interest in the situation. Stefaan comments:

> The CFO told me that he had personally committed to solving BARCO's IT problem. One of the reasons for his commitment was that he found it extremely difficult to track and report financials for the new organisational structure from the existing systems. Every time a change was required, it would take months to implement it in the systems. In the meantime, the finance people were compiling the numbers manually. As to improving operational performance, it was almost impossible to objectively identify best practices from similar business activities based on the performance data extracted from the IT systems supporting these activities. In sum, the CFO was ready, given the right plan, to back me up before the Board. This was important. The CFO was the person who 'sat on the money'. Moreover, he believed that I had the right profile for the job.

Important observations

A quick review of the evidence gathered during the first round of interviews with the IT department's staff revealed that large parts of the IT infrastructure – including server infrastructure, voice infrastructure, virtualisation systems, and data centres – were due for replacement. The situation jumped out at you as you simply walked around: PCs that were at least 6 years old; operating systems and local area networks were 10 years old and older; even the telephone infrastructure was suffering from old age. Stefaan comments:

> Our LAN equipment was so old that our provider did not even want to take it back, even though they usually give a trade-in value for old equipment.

BARCO also had some serious application issues. For one, BARCO was using a large number of software applications, many of them homegrown and only supporting a single business function, division or region. Connectivity had been managed in a rather *ad hoc* way. Over time, quite a few point-to-point application connections had been added in an attempt to streamline business processes and integrate information. But the result was a relatively complex IT architecture.[4]

Most of BARCO's product divisions (though not all of them) were using an enterprise system package acquired from Baan[5] in the 1990s. The enterprise software provided automation support in areas such as finance, manufacturing, order entry, supply chain, sales, service, and quality management. BARCO was one of the few organisations still using that 1990s version of the Baan software. The end-of-life expectation was now less than 2 years away, and no upgrade plan was readily available on the market. Over time, functional gaps in the software had led individual divisions to compensate with bolt-on applications and customisations. The application landscape had been suffering from stability issues and the IT people currently supporting Baan were fully occupied just keeping it running. For Stefaan, it was obvious that Baan needed replacing. He comments:

> You would expect enterprise system packages to support some level of commonality across the enterprise, wouldn't you? Now, the way the different installations of the same software had been tailored to the exact wishes of the individual divisions made it very clear to me that there had been very little enterprise application management. Honestly, from what I saw, I really didn't understand why BARCO had ever made IT a corporate function. The systems had been customised to such an extent that some divisions could even choose the colour of their chairs and tables. This application environment was clearly not ready to support the new business model – it was the kind of complexity that really kills your transformation.

The application architecture at BARCO was the result of a company that had been managed in silos.

> The application landscape was never designed with the new business model in mind. It did not support a matrix structure that required shared, company-wide business processes. It would also not support the business requirements around improving operational performance, nor would it be easy – or cheap – to add any of the new reporting, sales and other business requirements.

Stefaan soon learned how small the IT budget had become at BARCO. The evolution of the 'IT spend vs. sales' ratio (see Figure 5) showed that IT investments had not kept pace with sales growth during the years 2003–2008. The ratio was also well below industry benchmarks. Excluding personnel costs, 15% of the limited IT budget went to license fees and 85% to operating costs. The latter included a small amount of work spent on projects. To his surprise, Stefaan found hardly any depreciation for earlier IT investments in the books: there simply weren't that many IT assets to depreciate anymore. Even worse, no significant replacement investments had been budgeted either. Stefaan comments:

> Honestly, I was shocked when I saw the amount of depreciations and replacement investments. Especially since these investments had been lacking for the past three to four years. To me, that was a clear signal that BARCO had let its

- **SG&A IT costs ('IT Spend vs Sales') did not grow in sync with increasing sales:**

	2003	->	2008
Sales	100	->	132
IT	100	->	72

- **BARCO's 'IT Spend vs Sales' (1.33 %) is far below the benchmark figures (3.7 % to 5.6 %) and decreasing further:**

	2003	->	2008
'IT Spend vs Sales'	1.85%	->	1.33%

Figure 5 BARCO's IT spending profile.

critical IT assets go well beyond their replacement due dates. BARCO had been taking a serious risk. The situation also made me realise that even the smallest replacement investment I would propose would immediately increase my IT budget. So, one of the first things I did was get the necessary budget approved for replacement investments.

Another striking observation was that practically anyone at BARCO could go to the corporate IT department and ask for pretty much anything. There was no formal request intake process, no clear division of responsibilities, and no prioritisation mechanisms for deciding which initiatives needed to be done first and which could wait. The business's reigning perception was that 'corporate IT never gets anything done'. With regard to reputation, the IT department was nowhere. Thus, over time, many of BARCO's divisions had resorted to 'self-service', without involving the IT department. IT had no visibility on the resources allocated, let alone authority to counter divisional decisions.

Aligning IT and the business

As CIO, Stefaan engaged an external consultancy to audit BARCO's corporate IT department. He wanted an absolutely clear picture of the allocation of available capacity before proceeding: What, exactly, were people working on? How long did it take them to complete particular tasks? Stefaan explains:

I wanted to know what we were good at, and what we were capable of supporting. Which skills were at my disposal, and where were my critical shortages? I was lucky to have some good staff on board. I benefited from their insights into the urgency of replacing existing infrastructure and applications. With the help of my consultants, I then focused on preparing the IT organisation to support BARCO's plans. I was aiming for the most effective use of the available IT capacity.

Stefaan and the consultants turned their attention to redesigning the department's way of working (see Figure 6 for the new IT organisational structure). They needed to support BARCO's enterprise transformation – which entailed a fundamental shift away from the way IT used to work at BARCO. Stefaan comments:

IT is never an unconstrained capacity game. You have a certain number of resources and skills, and you have to do it with them. In addition, I needed to get the different business parties – which used to have a lot of freedom – to accept that we needed to make strategic choices, and respect those choices. This called for a structure that was organised around a limited number of strategic IT projects and also that gave the business a clear way of linking into my new IT organisation.

The plan was for IT to re-establish trust with the business in 2010. The bulk of the IT capacity would be allocated to an approved list of projects that (working with the existing system landscape) would meet the business's most urgent needs. Stefaan comments:

I wanted to start making promises to the business – promises I could keep. Which meant that the business would have to understand what we could and could not deliver. This also implied a disciplined way of working and decision-making.

After the first year, efforts to support the existing systems would be capped at 30% of the available IT capacity. This would be enough to alleviate the biggest operational needs and move to 'survival mode' for the current platform. This also implied professionalising the service desk (for day-to-day user support) and the infrastructure team according to best-practice standards such as the ones described in the ITIL.[6] The assumption was that the two teams would not merely support the legacy systems, but that they would support the new IT landscape as well. As of year two, the remaining 70% of the IT capacity would be used to put a new application portfolio in place. The work would be organised around a limited number of strategic IT programmes, such as replacing the Baan system and implementing a new Business Intelligence (BI)[7] layer.

A number of important roles and responsibilities were created with the aim of aligning business and IT. More specifically, the roles were introduced to support and sustain BARCO's new corporate IT platform. In the new organisation, domain architects represented the functional business areas: manufacturing, purchasing, marketing, sales & service, HR, finance. They were responsible for specifying requirements and helping business prioritise its demand for IT in view of the new business model. A team of Enterprise Architects (EA) would provide crucial support to ensure that BARCO's information and application architecture remained an asset, rather than a liability, to the organisation. They would work with the service desk and infrastructure team to gradually and smoothly transition new applications from development into live operation. The Project Management Office (PMO) oversaw strategic initiatives and provided guidance and administration for project management. The CIO office took responsibility for budget monitoring, vendor management, security and controls, and legal and compliance issues.

Baan needed to be replaced by what Stefaan called 'a true enterprise system' – that is, 'not a convoluted patchwork of applications (large and small, new and old), but one integrated

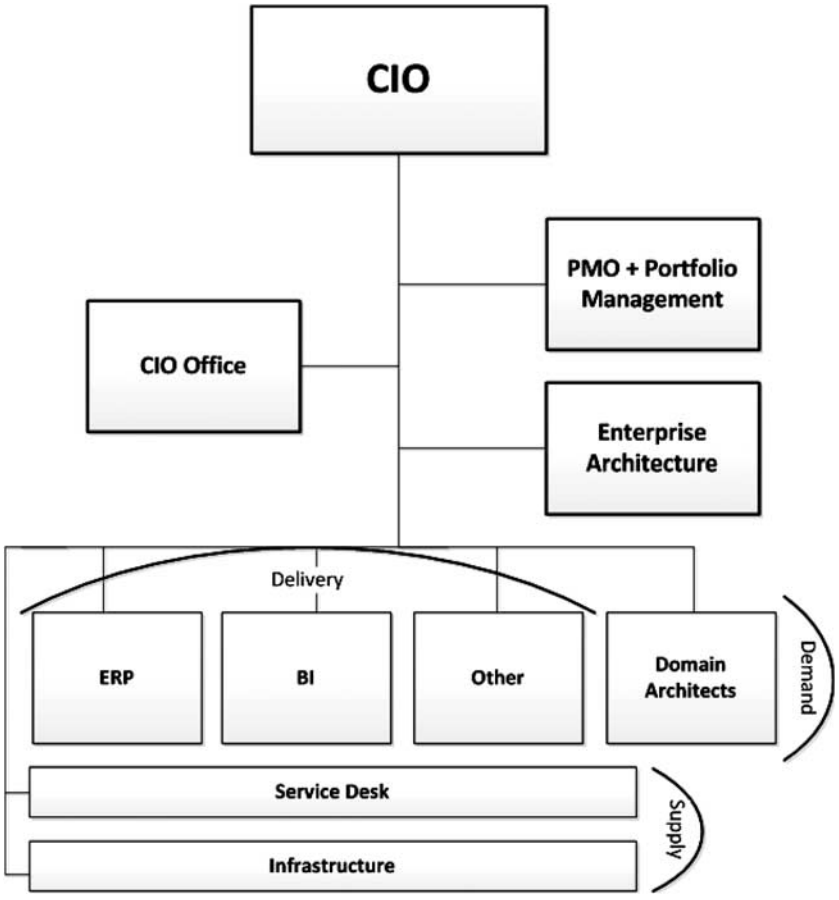

Figure 6 BARCO's IT department – new organisational structure.

system that provided standardised business processes and integrated business information'. SAP was chosen as BARCO's future enterprise software standard. Stefaan comments:

> Continuing the development of the old Baan software was out of the question. The Total Cost of Ownership was too high. We looked at implementing a completely new Baan system, but this alternative did not inspire much confidence. (Few organisations had adopted the software, and the new version did not have as complete a set of functionalities and options for implementation and support as other packages.) BARCO needed a robust, future-proof enterprise software solution. So, after some analysis, comparing four alternatives, we chose SAP. Now, we could focus on how we would use it.

Choosing SAP was as much a choice for a certain kind of change management as it was for software. Stefaan explains:

> SAP was our catalyst for change. We absolutely wanted to avoid the customisation tsunami of the past. SAP includes many industry best-practice business processes, so there was no need to reinvent the 80% or so of the processes that were not competitively differentiating. We needed to convince business to use as many out-of-the-box business processes as possible. Given the time, capacity and budget I had, this was the only way to proceed. Of course, I cannot overstate how important it was to have the CFO behind me.

Well aware that the proposed changes were drastic, Stefaan anticipated a steep learning curve for the people in the IT department. This was a new environment for everyone, with new rules and new responsibilities – and many people needed to be re-trained. Still, everyone had to step up to the challenge. There was no alternative.

Stefaan promised his people two things: (1) everyone would be involved in implementing the new enterprise system – no one would be left out; and (2) the new corporate IT organisation would be the only one – no alternative IT organisation would operate next to them. In return, he expected everyone to show full commitment to the change. Together, they would restore respect for the IT department.

Board meeting

Stefaan was confident about the case for change he had prepared for the Board meeting in December 2009. The current way of managing IT was doomed to failure. After some three months of intensive preparations, he was ready to present his new way of working, along with a budget proposal and change approach that enabled the CEO's transformation programme. The payout for BARCO's shareholders was expected in four areas: (1) a high-performance management system and culture seeking value creation; (2) standardised key business processes supporting cost reduction and high quality; (3) organisational impact for market responsiveness,

Table 2 Example performance indicators used for some key processes as a basis for the business case

Finance	*Information technology – core processes*	*Governance, risk and compliance*
• Reduce external audit costs • Reduce accounts receivable overdue • Reduce cost of finance transactional processes • Reduction in uncollectible accounts receivable write offs (bad debts)	• Reduce information technology spend • Reduce cost to support plant maintenance • Increase revenue • Improve customer retention • Reduce SAP spend	• Reduce cost to support environmental compliance • Increase new hire productivity • Reduce external security remediation costs • Improve automation of SoD (Segregation of Duties) report creation
Manufacturing	*Customer service*	*Supply chain management*
• Increase operating profits/earnings from lower defects • Reduce cost to support manufacturing execution • Reduce cost to support production planning and scheduling • Reduce cost to support quality management	• Reduce cost of operation per FTE • Decrease after-market service revenue • Reduce cost of customer interaction • Reduce average post-call work time • Reduce call handling time	• Reduce cost to support order fulfillment • Reduce sales costs direct store delivery • Reduce cost to support demand planning and forecasting • Reduce cost to support sales and operations planning

customer satisfaction and service; and (4) continued support for the existing application environment to safeguard business continuity.

The proposal on the table for the Board meeting was to proceed with purchasing the SAP licenses in 2009:Q4 and, with the help of a systems integrator, start a more detailed joint business and IT roadmap exercise in 2010:Q1. Stefaan had spent quite some time putting together a high-level business case with the help of SAP. The calculation included hardware, license and implementation costs for a time horizon of 3 years. The total budget for the investment – excluding personnel costs – amounted to 100 times the previous year's IT budget. Given his experience with previous SAP implementations, Stefaan felt fairly confident about the numbers. He was asking for a lot of money, but the benefits would also be significant. To get to a return on investment after 3 years, the improvement on key performance indicators for a selection of business processes was assessed using actual performance compared with estimates of performance improvement based on benchmarks, employee interviews, customer input, and other sources (see Table 2 for example performance indicators). The benefits were assessed under different scenarios. The most likely scenario foresaw annual operational benefits of about twice the investment after complete cut-over to SAP. In addition, there would be a multiple of the investment amount in one-time benefits.

Stefaan knew the CFO was behind the proposal. He had also been sure to discuss it upfront with the CEO (who had asked Stefaan to restrict his slides to the essentials). IT would be the last item on the Board's agenda for December. Still, Stefaan wanted to make sure the rest of the business leadership would not only approve his proposal but commit to helping it materialise as well. One of Stefaan's most critical assumptions was that they would be willing to accept 'ownership of the benefits' attributed to his grand SAP implementation. In other words, he hoped they would be willing to take responsibility for realising the benefits. Certainly, Stefaan needed the involvement of some of BARCO's best business people to make the changes really happen. The IT department was currently facing a really rough time operationally, as BARCO was ramping up efforts in the digital cinema business. How would the businesses respond when IT asked them to free up their best people to work on SAP?

Acknowledgements

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Notes

1 For more information, see http://www.barco.com/en/About BARCO/History.
2 BARCO Company Brochure e-book; http://www.BARCO.com/eBooks/companybrochure2010/index.html.
3 An enterprise system is a commercial software package that promises seamless integration of all the information flowing through a company. For more information, see Davenport (1998).
4 IT architecture is the organising logic for applications, data, and infrastructure technologies, as captured in a set of policies and technical choices, intended to enable the firm's business strategy. For more information, see Ross (2003).
5 The Baan Corporation was created by Jan Baan in 1978 in Barneveld, the Netherlands. It focused on the creation of enterprise system software. In June 2000, facing serious financial difficulties and lawsuits, Baan was sold to Invensys, a UK automation, controls, and process solutions group. In June 2003, Invensys sold its Baan unit to SSA Global Technologies. Upon acquiring the Baan software, SSA renamed the software as SSA ERP Ln. In August 2005, SSA Global released a new version of

Baan, named SSA ERP LN 6.1. In May 2006, SSA was acquired by Infor Global Solutions of Atlanta, a major enterprise system consolidator. For more information, see Baan Corporation (2013).

6 The Information Technology Infrastructure Library (ITIL) is a set of practices for IT service management that focuses on aligning IT services with the needs of business. It covers best practices for six main topics: Service Support; Service Delivery; Planning to Implement Service Management; ICT Infrastructure Management; Applications Management; and The Business Perspective. For more information, see http://www.itil-officialsite.com/.

7 Business Intelligence (BI) is a system that encompasses the technologies, applications and means for collecting, integrating, analysing and presenting business data to improve decision making. Tools used for BI range from querying and reporting to advanced analytics. For more information, see Davenport (2006).

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