Offensive KPIs:
Improving buyer-supplier collaboration in interorganisational service supply networks

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Plenary presentation for the International System Dynamics Conference, Radboud University Nijmegen, July 2006

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ABSTRACT

Telecom service supply chains have changed drastically over the last decade. First they were mainly under control of a single firm and served stable markets, often protected by state monopolies. Today, they have transformed into interorganizational supply networks, in which large numbers of interdependent organizational entities provide fast and high-quality services to demanding customers. All entities in these networks have their own strategic interests and unaligned operations. The issue of how to coordinate strategy and operations in the highly decentralized supply networks that are typical of the telecom sector and other service industries is of paramount business relevance and a problematic one for which existing theoretical frameworks seem inadequate.

In this paper an approach is presented that may overcome help to overcome these issues: the offensive KPI approach. Traditionally, suppliers are rated against cost-related performance indicators under their direct control, so-called "defensive KPIs". In this new approach, suppliers are instead rewarded for their contribution to end-customer related performance indicators. These "offensive KPIs" are determined by both buyer and supplier. These KPIs have to be based upon a thorough and shared understanding of the root causes of operational performance across organisational boundaries. Such understanding is created through working meetings with top management and operational employees from both the supplier and the customer. System dynamics methodology is used to structure this communication process. In doing so, both the "soft" and the "hard" aspects of the relation are addressed.

This approach is described in a case involving the turnaround of the buyer-supplier relation between KPN Telecom, a medium-size European Telco, and Atos Origin, a leading ICT services provider in Europe. The article grounds these findings in the literature and suggests several new routes for future services research.

1. INTRODUCTION

The service industries account for the largest share of economic activities in North-America and Europe, and have thus taken over the position formerly held by manufacturing. The service sector is the largest provider of jobs, half of the Fortune 500 firms are service firms and services are an increasingly substantial component of manufactured goods (Boyer and Metters 2004)

At the same time, the world of service companies has changed dramatically in the past decade, and looks set to change even more in the coming years. Take the telecom services sector, one of the largest service industries, and a sector that has seen

remarkable change and may serve as a good exemplar of how services have changed. Ten-fifteen years ago, The Telco took care itself for all business operations. There was of course only one incumbent in every region, and ordering, delivery, installation, service, customer queries, billing, ICT and much more was all done by this single integrated Colossus.

These days, if a consumer wants to upgrade from a normal fixed line to a broadband connection such as ADSL to speed up her internet connection, up to a dozen of semi-independent organizations all must collaborate to make that possible. Firstly, there is the call centre that one calls to have this arranged, which is often outsourced. Also, your Internet provider who has to change your subscription. Then there is the ADSL business unit of your Telco that receives the actual change order. The network operator, that for regulatory reasons must be independent, that can change your current connection. The service group that will provide the technician who can do this. The external logistics service provider that supplies you with the new modem you will need. The central department for customer communication that provides you with letters and e-mail describing what will be happening. The customer complaints department that you end up with if something goes wrong (as it often does). The billing department, for obvious reasons. And perhaps some central coordination unit that tries to fix all loose ends together. And, behind all these units, dozens to hundreds of IT systems, mostly managed by an external ICT services provider, but one that has to interface with everyone in the various units that is making changes to these IT systems. Not surprising, such an organisational set-up makes effective coordination and superior performance for the final customers very problematic indeed. Problematic in practice, but also in theory. Although issues such as these have been studied from a variety of theoretical viewpoints, there are no clear answers on how effective coordination should be achieved. After all, all these units have their own independent strategic priorities and set up their operations accordingly, which is by definition not an optimal design for the service supply network as a whole. Thus, coordination cannot be enforced by one party, but has to arise from effective collaboration between parties. The key question thus is: how is effective collaboration between buyers and suppliers in such interorganisational service supply networks achieved?

This article is structured as follows. In the next section, we briefly place this work within the existing literature in the several research areas that it relates to. Then, in Section 3, we introduce the case setting: The services supply network of KPN Telecom and its IT supplier Atos Origin (AO) and the challenges it was facing. In Section 4 we describe the change process we went through in which we used Offensive KPIs to turnaround the relation between these companies and their joint performance. In Section 5 we take a step back from this specific case and list the key components of the generic Offensive KPI approach. We also look at limitations and opportunities for this approach. We round off with our Conclusions in Section 6.

2. THEORETICAL BACKGROUND

The present-day reality of services is that the organizational structures through which such services are developed have become very complex and thus their effective coordination has become extremely difficult. Not surprisingly, there have been repeated calls for a more multi-disciplinary research approach in studying them. Hill et al. (2002) claim that “Service design research must draw on many disciplines in

addition to operations management, including marketing, organizational behaviour, psychology, corporate strategy, functional strategy, information systems, operations research, and economics." (Hill et al. 2002 p.199). However, at the same time they note that the bulk of the literature in this area remains mono-disciplinary. Moreover Osborn and Hagedoorn (1997) already pointed out that, although such simplifications are very tempting since "they appear to yield clear-cut, defensible and testable hypotheses, (…) over time, they have yielded a series of conflicting, limiting and biased views (Osborn and Hagedoorn 1997 p.274.)

As the issue of coordination of interorganizational service supply networks is so broad and complex, we limit our discussion of the literature to those topics that are directly relevant to the case setting we are describing in the current paper.

1. Service operations
2. Supply chains and networks
3. Interorganizational collaboration and alliances
4. Buyer-supplier relationships
5. IT Outsourcing
6. Performance management

2.1. Service operations

Firstly, we will look at service operations. In the past, by far the most attention has been given to production operations. However, with the shifting economic focus on services, this changed rapidly (e.g., Johnson 1999, Rust and Chase 1999, Hill et al. 2002) A great deal of the knowledge on how to coordinate production operations is applicable to service operations, but much is also not readily translatable. This is because service operations have unique characteristics, such as the high level of customer contact and influence, simultaneity of production and consumption, intangibility, nonstorability, perishability, and labor intensity (Nie and Kellogg 1999; Slack, Chambers, and Johnston 2001).

For instance, in the banking industry Roth and Jackson (1995) found that increasingly higher levels of factor productivity were correlated negatively with service quality, which is not what one would expect in a manufacturing context. Furthermore, Oliva and Sterman (2001) studied how the choice of inappropriate metrics can lead to quality erosion in service operations.

2.2. Supply chains and networks

Heskett et al. (1997) first discussed service operations as a chain, as a "service profit chain". However, in reality, the coordination of service supply chains, and of service supply networks specifically, is still at best a nascent research topic (Anderson and Morrice 2000, Stanley and Wisner 2001, Akkermans and Vos 2003, Anderson et al. 2005). Service supply chains form a subset of the broader field of supply chain management (SCM). In SCM, we are also witnessing a move from chains to networks (Fine 2000, Choi et al. 2001, Hameri & Paatela 2005, Akkermans and Dellaert 2005). In these supply networks, central control is no longer possible. The behaviour of the whole becomes an emergent property of the network, resulting from the many interactions between the network members (Choi et al. 2001, Dyer and Hatch 2004, Akkermans and Dellaert 2005).

2.3. IT Outsourcing

One particular form of a supply network is where the supplier is managing assets and functions formerly under direct control of the buyer. This business practice is called outsourcing. Of the various kinds of outsourcing, IT oursourcing is probably the most fashionable one, and still strongly rising in popularity. According to Business Week (2006), the addressable market for IT outsourcing is about $200 billion, whereas the current value of IT outsourcing is only 10% of that. We know that an outsourcing relation can grow into a strategic partnership (Zviran et al. 2001) but this is by no means an automatic development. Also for this reason, many firms are reluctant to outsource fully, especially when the IT activities in question are high-risk (Aubert et al. 2004) or highly asset-specific (Barthelemy & Geyer 2005). Rather, firms will outsource the assets but bind the activities to their own firm through contracts, in what Barthelemy and Geyer (2005) call "quasi-outsourcing".

2.4. Performance measurement

Managers have a natural tendency to want to know how the activities under their control are doing. For this they need data, performance data in particular. Nowadays, managers have access to myriads of performance indicators. However, they typically prefer to look at a limited set of performance indicators. This becomes all the more important when ones' own performance is strongly determined by outside parties, as is typically the case in service supply networks. Performance management (Neely 1998, Kleijnen and Smits 2003) and balanced scorecard development (Kaplan and Norton 1992, 1996, 2004) therefore seem obvious steps to coordinate activities in these networks. Indeed, Anderson and Jap (2005) rightfully point at the "dark side of close relationships", which is that when personal relations in such a network are very close, there is less emphasis on developing formal performance measures and escalation mechanisms, which hurts longer-term performance.

In supply network settings, performance measurement is often problematic. After all: what is one to measure? For instance, Stanley and Winter (2001) found that better cooperation between a customer and service suppliers led to better internal service and that this, in turn, led to external service for end customers. In this case, against what should performance be evaluated against: the quality of the collaboration, the quality of the internal service or the quality of the external service? Similarly, Mittal et al. (2005) have suggested that it neither focusing on customer satisfaction nor focusing on cost-reduction exclusively has the best impact on performance, but rather a dual emphasis on both. And, that this may hurt financial performance in the short run. If that is so, should supplier contribution to short-term or to long-term performance be measured and rewarded?

2.5. Interorganizational collaboration and alliances

One way of looking at supply networks is as a combination of several alliances or interorganizational collaborations. What drives alliance success has been a popular topic of research for some time (see Osborn and Hagendoorn 1997) For instance, we know that many if not the majority of these alliances fail. However, we also know that effective alliance management starts with selecting the right partner.Moreover, we know that these then must be managed to build social capital and knowledge. And also, that to maximize cooperation between the partners, a trust-based relationship

must be developed (Ireland et al. 2002). Furthermore, we know that the performance of the alliance is correlated with the quality of the collaboration (Saxton 1997). It is also known that successful alliance projects are highly evolutionary and go through a sequence of interactive learning, re-evaluation and readjustment (Doz 1996, Ariño and de la Torre 1998). Nevertheless, we are also aware that the initial conditions have a long-term impact on the subsequent dynamic nature of alliances. (Doz 1996, Doz and Hamel 1998, Ariño and de la Torre (998).

2.6. Buyer-supplier relationships

Yet another perspective on service supply networks is conceptualising them as a set of buyer-supplier relationships. Supply chain management literature suggests that the closer the collaboration with buyers and suppliers is, the better the business performance becomes (Spina and Zotteri 2000, Frohlich and Westbrook 2001, Fynes et al. 2005). However, unfortunately, many buyer-supply chain relations appear to be locked into a vicious cycle of low trust leading to low collaboration, to very poor coordination and hence to low businesses performance and even less trust (Akkermans et al. 1999, Akkermans et al. 2004). Or, to reverse this line of reasoning in a positive trend: suppliers' perceptions of buyer fairness enhance relationship quality and presumably also performance (Kumar et al. 1995).

3. CASE BACKGROUND

In this section we zoom in on the case setting. First we introduce briefly both companies involved: KPN Telecom in the customer role and Atos Origin in the supplier role. Secondly, we describe the main events that led up to the crisis in the relation between these companies towards the end of 2003. Thirdly, we describe the crisis itself.

3.1. Company introductions

Royal KPN Telecom is the former state monopolist in telephony services in the Netherlands. Today, KPN's 28,000 employees serve 7 million fixed-line subscribers and 2 million Internet customers in the Netherlands as well as approximately 18 million mobile customers in Germany, the Netherlands and Belgium. KPN was privatized in 1989. KPN's shares are listed on the stock exchanges in Amsterdam, New York, London and Frankfurt. In the Netherlands, KPN remains market leader in the existing market segments and is a dominant player in the "new world" of IP and DSL. Furthermore, it has recently adapted its brand image from a telephony - towards a customer focused multi-media company.

Atos Origin is a leading European IT company, headquartered in France with a strong presence in the Netherlands as a result of acquiring Origin in 2000. Origin in turn was formed by the merger of Philips Electronics's former IT subsidiary and Dutch software house BSO in 1995.

3.2. Three outsourcing deals in 2001-2002

KPN was in good company when in the 2000/2001 timeframe it was confronted with the bursting of the Internet bubble. To make things worse, all Telecom operators in Europe had just invested heavily in UMTS licenses, thereby stretching their financial

capabilities to the hilt. Hundreds of billions Euro were spent by the telecom industry on these licenses. Huge sums were drawn from the capital markets, leading to excessive debts. In 2001, this drove almost all operators into near bankruptcy. KPN was also in dire straits as evidenced by Figure 1.

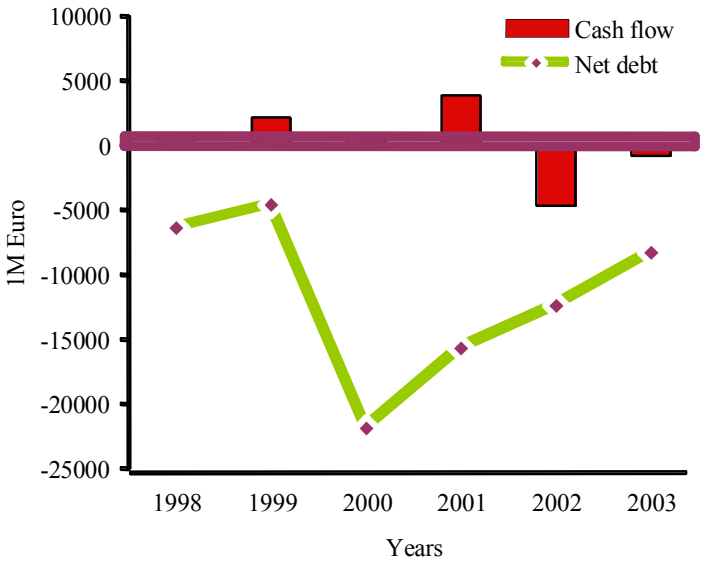

Figure 1: Net debt and cash flow KPN Telecom 1998-2003

In the fall of 2001, KPN initiated a massive turnaround process, cutting costs and divesting non-profitable and non-essential assets and using the proceeds to reduce its' massive debts. One of the major elements of the latter was a company-wide outsourcing program whereby IT, Call Centers, Research, Logistics, Training and Educational Services were all outsourced. Aside from the exit of hard assets, about 5500 people had to leave the company.

As mentioned above, one part of KPN's assets that was outsourced was its IT infrastructure, i.e. the IT systems that supported the business processes of the company. At this time, KPN Telecom had a legacy structure of over 1000 internally and externally developed applications with stove-pipe solutions, and more than 1700 point-to-point connections between them. Not surprisingly, performance left much to be desired. Data were inconsistent, customer satisfaction was poor and operating costs were high. Also, the IT demand organization was very disparate.

The main objectives of this outsourcing deal were not long-term. "Assets out, Cost Out and Cash in" were its main drivers. KPN was operating on a burning platform and speed was essential. This led to the outsourcing of non-optimised processes, system landscapes and demand organizations. Moreover, in many instances explicit subject matter expertise, - a key requirement to be able to manage the outsourcing partner- was transferred as well.

In a period of 18 months, three outsourcing agreements were contracted between KPN and Atos:

1. The Data-center, as an asset deal, with more than 1000 Full Time Equivalents (FTE) involved;
2. End User services, which was a mix of assets and outsourcing, impacting 700 FTE;
3. The Software-house, a classical outsourcing deal, involving about 600 FTE.

KPN management used to following criteria to select its outsourcing partner:

- The ability to take over personnel professionally
- The ability to provide continuity of services
- Financial values: purchase price and cost reductions.

In light of the prevailing crisis, the financial argument weighted most heavily. Ultimately, these three deals were awarded to Atos Origin,
For Atos, the main drivers in this deal were twofold:

- The ability to make a serious entry into the Telco industry;
- The ability to expand in the Dutch market and enter in the German market.

Already during, but especially shortly after, the outsourcing process, the Telecom business further collapsed, and its IT business followed suit. AO's intention to use KPN's assets as springboard to the market was no longer realistic in light of the new market situation. Now, it had to rely heavily on the returns from the outsourcing deal with KPN rather than on external revenue growth. As such, KPN's cost-down drive came into direct conflict with Atos's revenue aspirations.

During the outsourcing, Atos had secured two safeguards regarding revenues:

- *A revenue guarantee*: In case KPN demand would be less than a certain threshold, KPN had to compensate AO by paying penalties ranging between 25 and 50 % of the gap between guaranteed- and actual revenues
- *A First-Call-Last-Bid clause* that, on the one hand, ensured KPN confidence with regard to market conformity and, on the other hand, made sure that AO would have a chance to match any competitive offer from the market.

3.3. After the outsourcing and into the crisis

In 2003, almost two years after the outsourcing had first been initiated, it became crystal clear that the relationship between KPN and AO was deteriorating fast. Upon reflection, it was also clear why: in the new market setting, the original set-up of the outsourcing deal was working against improved performance and partnership. KPN's aggressive cost-down drive led to lower than expected IT expenditures. This, in turn, invoked penalties under the Revenue Guarantees. To counter these, KPN occasionally would enter into ill-founded projects with AO not for competence-based reasons, but mainly financial ones, i.e. only to avoid penalty costs. This situation was aggravated because at KPN IT in-sourcing capabilities had been out-sourced, and supplier relationship management remained under-developed and shaky.

What also turned out to be counter-productive is that the cost-down drive at KPN was directed at the business units of KPN, whereas the original outsourcing deal had been a corporate one. As a result, KPN business units felt it was unfair that they had to solve a problem (revenue guarantees and associated penalties) that was not caused by them.

On the other side, the revenue guarantee inevitably led to complacency at AO. This business set-up gave Atos the incentive to utilize its current assets as much as possible and not spend energy on developing major innovative, cost cutting ideas. Atos was perceived by KPN as to be "leaning against the fence" and not to be the risk-taking innovative partner that KPN was eagerly looking for on its way back to business prosperity.

Status quo at the end of 2003

At the end of 2003, KPN Telecom and its suppliers could be rightfully characterised as an interorganizational service supply network as described in Section 2. We will

illustrate this by looking at the same aspects as we did in our literature review in Section 2.

As an example, we will take broadband access, in the form of telephone wire connections, which is called ADSL. Demand for ADSL took flight in 2003. The Netherlands now have some of the highest market penetrations of the world. Partly, this situation is caused by the highly competitive nature of the Dutch broadband market, which in turn is generated by the strong position of cable, which has an almost 100% market penetration. The result of this is that in every Dutch home there are two potential connectors to the world of broadband Internet: the copper wire from the telephony network and the coax cable from the cable TV provider.

Service operations

Firstly, the discussion at hand pertains service operations. There are some direct physical product elements in the total service offering, such as the modem that needs to be installed; but most of the value proposition of broadband access can be grouped as services. Figure 2 shows the service operations through which KPN offered broadband access in the consumer market in 2003.

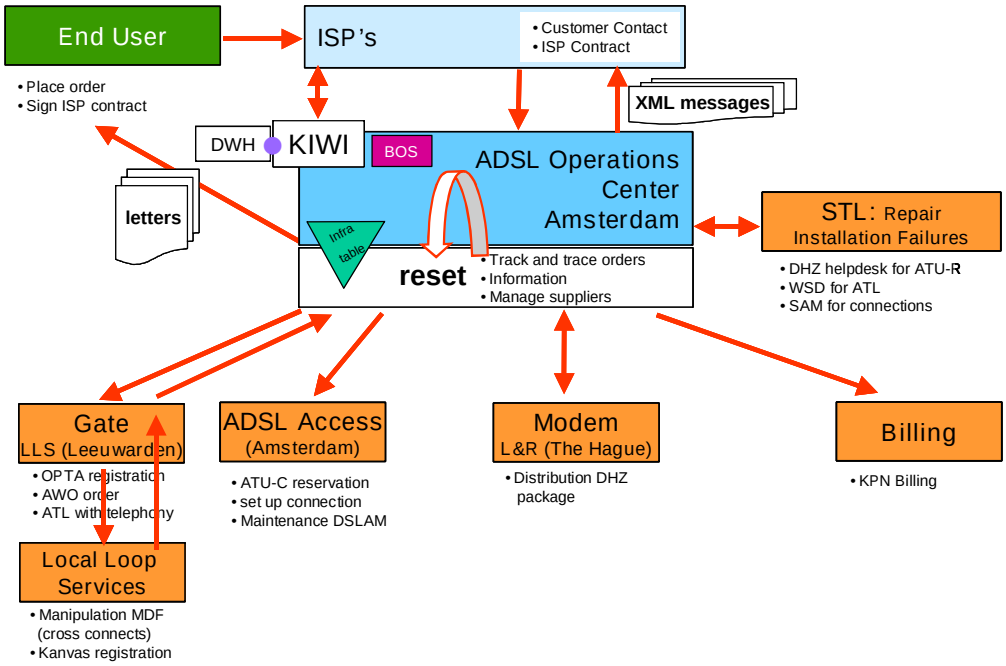

Figure 2: Composition of the service operations for Broadband access with KPN

The end user orders through the Internet Service Providers (ISP's) of KPN (of which there are three, for the low-, medium- and high-end of the market) an ADSL connection. These pass on this order to the ADSL operations centre in Amsterdam. From there, several independently operating service units are coordinated. From left to right in Figure 2, there is:

- The regulatory part of the service: KPN, as the owner of the "local loop" in the Netherlands, which is the final part of copper wire leading into consumer homes, is required by the regulatory body, called OPTA, to make no distinction between third parties and KPN itself in connecting customers.
- ADSL access itself, which can work once the local loop connection is secured;

- Provision of the modem, which is one part of the network that contains physical products, and which is done through a logistics service provider;
- The actual installation and repair units STL, which physically visits locations that require on-site work;
- The billing process, that starts once the installation is signed off as completed.

Supply network

From this description and Figure 2, it already becomes clear that the supply structure is not a chain, it is a network. Moreover, it is a network of multiple independent companies, or internal units that operate independently from one other. As described already in the Introduction, a whole network of such organizations together provides the total service. In terms of their independence, these vary on a scale from completely external to internally interdependent:

- Truly independent companies are (1) the logistics provider, (2) the call centre (which was outsourced during the 200-2001 crisis but was bought back later) and (3) the IT provider Atos Origin that runs the many IT systems that are required to process orders;
- Formally owned by KPN, but in the market place operating as independent units, are the three ISP's (4) HetNet, (5) Planet Internet and (6) XS4All;
- A regulatory independent unit is (7) the local loop organisation that is required to offer the same level of service to every provider of broadband access;
- Organisationally independent units are the business units for (8) broadband access and (9) the regular fixed line voice services;
- Internal service providers are (10) the install & repair units and (11) KPN billing;
- Located in Amsterdam, (12) an internal coordination centre is set up specific for these ADSL orders.

So, at least a dozen organisations are needed to install broadband access to one's home. For simplicity's sake, we have excluded several other independent parties, such as the manufacturers of modems and cables from this list. All the operations of these organisations have to proceed in sync. The above described situation is truly a supply network.

IT outsourcing

The IT landscape is, in a way, a mirror image of this highly fragmented organisational network. It is summarised visually in Figure 3.

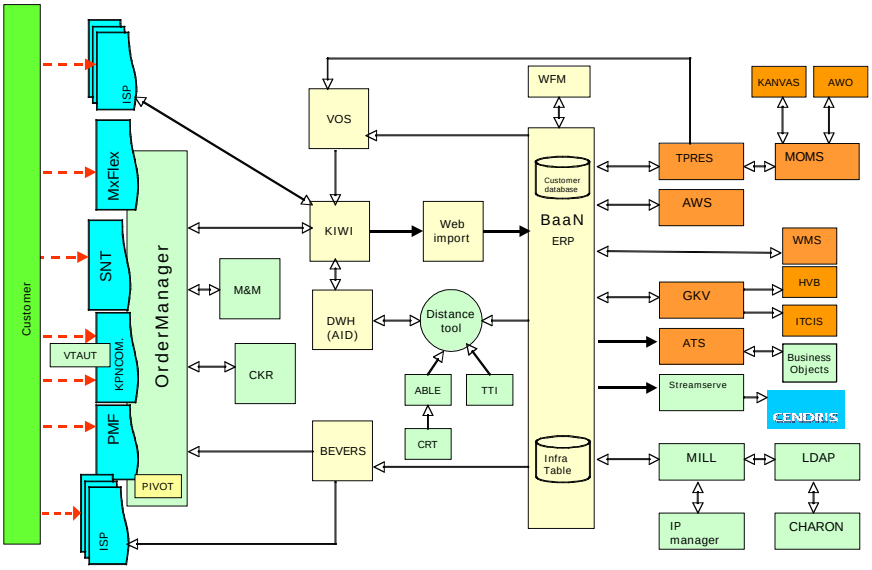

Figure 3; The ICT system landscape for broadband (ADSL)

We will not describe this system landscape in detail. What does come across immediately from this figure though, are two observations:

- Dozens of systems, most of them customized, and many of them true legacy systems, are needed to operate this business;
- At least as many interfaces are present between these systems, and thus very frequent messaging and interference between them has to occur.

What is not immediately apparent is that the organisational interfaces for these systems are also rather complex. Most of these systems were run by Atos Origin, but not all of them. Other systems are shared by multiple organisational units.Who can change what properties, where, when and how could be a very difficult question to answer. What the consequences can be of a change in one system for all the other systems is, in general, simply unanswerable. And such changes had to occur frequently, not just for system maintenance, but also because KPN's rapid product introduction process meant that these systems had to support new functionality every month.

Performance measurement

At the individual "box" level of specific systems, many service level agreements, or SLA's, existed between Atos and KPN. In fact, there existed literally several thousands of such performance metrics. Unfortunately, hardly any joint measures existed that guaranteed performance of the interfaces between these systems, let alone the collective performance of the entire system network. Understandable, because there was not a single organisation that could control this entire network, and because it was so difficult to assess what the performance consequences might be of manipulation of one of the 12+ organisational units that were entitled to make changes to systems.

Interorganizational collaboration/alliance

Both KPN and Atos suffered from the "shadow of the past", as frequently happens in alliances and inter-organisational collaboration in general. To KPN, Atos was partly

still the former internal supplier whose performance was not especially loved, and who now could be treated at last as an external party and expected to deliver the same level of performance as any other external party. To Atos, KPN was the company that it had paid good money to and helped get its balance sheet cleaned up of excess assets and staff, in exchange for a solid future revenue growth.

To both organisations, the performance of the other party so far had been disappointing. In the eyes of KPN management, Atos was not performing at the market level, and was indeed sometimes felt to be "leaning against the fence", assured of future income through its revenue guarantee. To Atos, KPN was the company that was constantly interfering in "their" IT management process, and that at the same time was not at all generating the revenue increases that they had contractually committed to.

Buyer-supplier relationship

As mentioned above, the relationship between KPN and AO deteriorated rapidly by the end of 2003, almost two years after the outsourcing was first decided upon. The main reasons for this could be traced back to the original set-up of the outsourcing contract and the unexpected turn of events afterwards

So, KPN's aggressive cost-down drive invoked penalties under the Revenue Guarantees. To counter these, KPN occasionally entered into ill-founded projects with Atos, only to prevent having to pay these penalties. On top of this, the outsourcing deal was perceived by KPN as a "corporate" deal, but it was up to the various business units of KPN to satisfy the guarantees or else pay penalties. As indicated, on the other hand, the revenue guarantee led to complacency at Atos. For Atos management, asset utilization was key and no real innovative or cost-cutting ideas were brought to the table.

Not surprisingly, for the genuinely innovative new projects, other IT companies were asked to submit proposals. However, the First-Call-Last-Bid proviso made the competition realize quickly that their proposals were only used to drive Atos to market conformity. KPN had no capabilities in house anymore , as its own in-sourcing capabilities had been outsourced, leading to insecure supplier relationship management.

Parties were frustrated and the perceived quality of the services went from bad to worse. Indeed, Atos and KPN were caught in the vicious cycle that plagues so many buyer-supplier relationships (Akkermans et al. 1999): both parties were dissatisfied with current business performance, blamed the other side for this, so distrusted each other, as a result did not communicate optimally, so not all relevant information was shared in a timely manner, and, as the inevitable result, performance could only deteriorate further. Clearly, the situation needed to be resolved, and something had to happen fast.

4. THE CHANGE PROCESS: FROM BUYING SERVICES TO CONTRACTING PERFORMANCE

The second author of this article joined KPN as its' new CPO in August 2003. The situation described above was the major issue with which the new CPO was confronted when he joined the company in August 2003. The question of how to salvage the relationship between KPN and Atos, and have it evolve towards a

strategic partnership, was the first major issue to be dealt with in this new job. In October 2003 a turnaround was initiated, in which the second author was the responsible senior manager, and the first author was involved as a consultant and researcher.

From the analysis of the developments up to that time it seems clear, certainly in retrospect, that the unbalance that had been created in the original outsourcing deal would have to be corrected. It was also clear that if this relation was to evolve into a true partnership that its' governance should change from a penalty-driven contract form to a much more performance-based form. It was also clear that, if these lofty ideals were to be achieved, a strongly-led turnaround process would have to be followed. A reversal of the currently downward spiral of low trust, bad collaboration and deteriorating performance had to be amended into just the opposite: more trust between parties, leading to better collaboration, leading to improved business performance, leading in turn to a more trustworthy relationship between the two parties.

In describing this turnaround process we distinguish two organisational levels where change took place and five phases in which this change process can be divided. The overall timeline is summarised in Figure 4.

There was general consensus in the February 2005 Partner-board (bi-annual Board level meeting between the two companies) that the Turnaround in effect was well under way and that the KPI scheme had proved its value in enabling the Turnaround.

4.1. Overall timeline: five phases and two levels

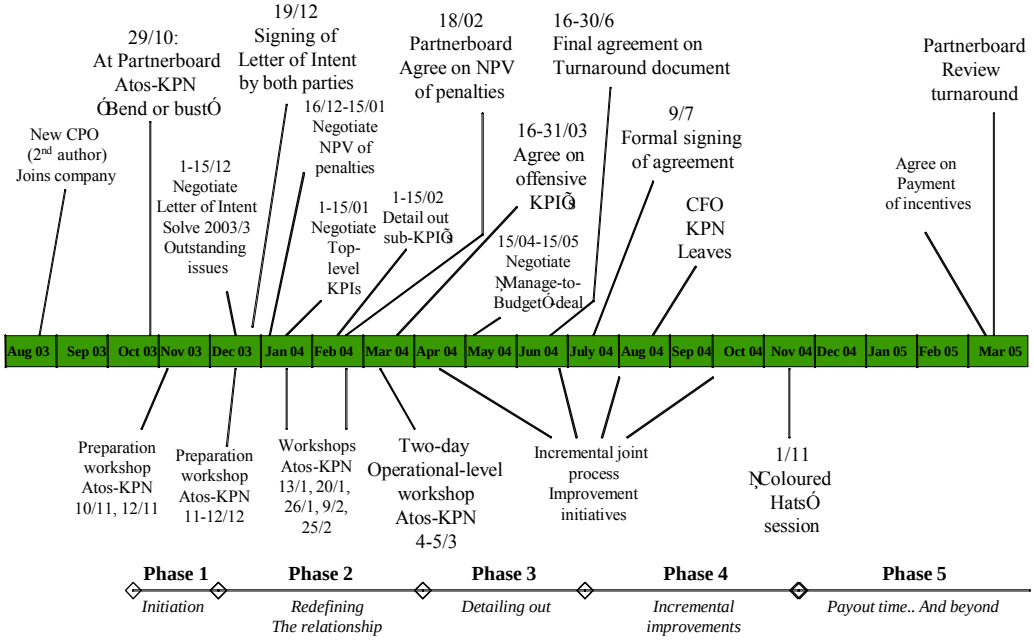

Figure 4: Timeline of turnaround KPN-Atos relationship

4.2. Phase 1: "Putting a pot of gold under the CFO's seat" (Oct-Nov 2003)

This first phase started on October 29, 2003, when, at the three-monthly or bi-annual "Partner Board Meeting" between top management of KPN and Atos, the second author - in his role as CPO - delivered, with close backing of his CFO (chief financial officer), a message to Atos intended to redefine the relationship. This message was that KPN was very dissatisfied with the way things were going so far, realised that the manner in which their joint relationship was defined lay at the root of the current performance and proposed to redefine this relation drastically. The choice for Atos was clear: either go along with this proposal, or run the risk that KPN would make its' dissatisfaction public.

The financial component of this redefinition was a creative one. KPN wanted to get rid of the Revenue Guarantee and suggested to do this by

a) Consolidating the revenue guarantee exposure;
b) Putting the amount of money this would entail in today's money (its Net Present Value or NPV) in Escrow, and "placing this pot of gold under the CFO's seat";
c) Start measuring Atos's performance from there on against new, to-be-defined KPI's , linked to what KPN considered business value and
d) Reward Atos for how it performed against these KPI's out of this Escrow money.

The first author became a part of this process shortly thereafter, and could witness first-hand the effect that this bombshell message had on the quality of the relations. In the second week of November there was a first workshop with both senior and mid-level management of Atos and KPN to share perspectives on the present way of working together and on suggestions from either side for improving the current process.

The agenda of that first meeting had three major topics:

1) Elaborate on the Strategic Intent of each party and determine their congruence;
2) Share results of internal pre-workshops outlining the interdependencies of (the (processes of) KPN and Atos;
3) Propose ideas that might lend themselves for translation into the required "Turnaround KPI's"

This set-up was based upon the first author's earlier experience with inter-organisational collaboration (e.g., Akkermans 2001, Akkermans et al. 2004). It would consist of presentations from either side followed by an informal brainstorming on opportunities and next steps.

When both parties entered the room this meeting was to be held in, it immediately became clear that things were not going well at this stage. Both parties entered in close group formation, settled on opposite sides of the table and waited for things to happen. The presentations were fine enough, although understandably not directed to the heart of the dispute, i.e. the joint relationship. One of the top managers of KPN explained the challenges his business was facing, the competitive pressures KPN was under and the market imperative to cut costs drastically. The top account manager of Atos gave a presentation on Atos' position in the European market, its value proposition to the market and endorsements from various customers.

The atmosphere remained polite and business-like. A slight glimpse of the veiled feelings became visible to the first author when the top executive from KPN stepped out of the room. The top executive from AO bent over to him, in his position

as facilitator, and hissed in his ear: "If he is leaving, I'm out of here too!". Luckily for the process at this stage, the KPN top executive reappeared shortly, notifing the room that he had just made a telephone call to one of his fellow managers, to secure backing for a favourable business deal he wanted to propose to Atos, as a sign of good faith from KPN side.

The atmosphere slowly started to improve somewhat from this all-time low, in the rest of the evening and the days following this meeting, but it was not until a joint Letter of Intent could be signed at the highest management level in mid-December that both parties could move on to the next, and more constructive stage, of redefining their relationship.

4.3. Phase 2: Redefining the relationship (Dec 2003-Mar 2004)

From the beginning, there was the clear aspiration of the CPO and CFO to change this relation from a classic buyer-supplier one into a performance-driven one: " *from buying to contracting performance"*, as the CPO described this turnaround. But at the onset it was not al all clear what this might entail. What was needed was a better understanding of what actually drove performance of both Atos's systems and KPN's business processes and how these were interrelated. And the only way in which these interrelationships could be identified was by mapping them out jointly.

It was the lead senior manager at KPN who suggested in February of that year that this mapping exercise should focus on the "classical" business of KPN, rather than on the more innovative business segments: the straightforward voice telephony process of PSDN/ISDN. There was a series of preparatory meetings of employees and middle managers that led up to a major two-day off-site workshop in the beginning of March, where some 20-odd people from both organisations came together.

This was to become a memorable event. There were many personal introductions and handshakes, between Atos and KPN participants, but also between people (again) from the same companies.

The workshop started in the evening. To get participants in the right mood, the participants played the famous "Beer Game" (Sterman 1989), demonstrating the pitfalls of stove pipe organization's cooperation and communication in a supply chain. Afterwards, many times throughout the workshop, references were made to the lessons learned during that first evening.

In the morning of the second day there was plenary meeting, where a so-called group-model-building session (Vennix 1997, Akkermans and Vennix 1997, Akkermans 2001) was conducted by the first author, who was the overall facilitator of workshop). The starting question for this session was: *what happens when something goes wrong?* A causal loop diagram (Sterman 2000) was developed with the group to address this question. Similar diagrams had been developed earlier on by both parties in this process in company-specific modelling workshops. Figure 5 shows part of the causal loop diagram generated through this particular investigation.

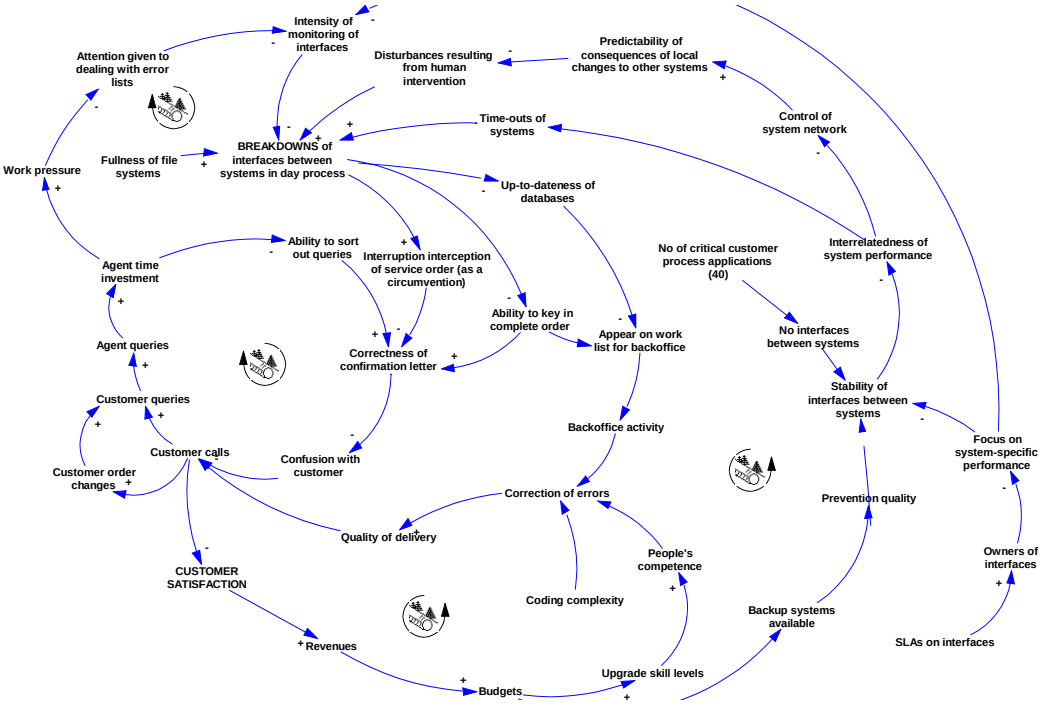

Figure 5: A partial causal loop diagram from the March 2004 Workshop

This is just a partial rendering of the entire group-model building, but contains some essential elements of the key determining factors for overall process quality. It was developed on the spot with the various process experts from both sides. It reads as follows:

> At the top left one can see a central element in "what can go wrong and what happens then": some interface between IT systems during the day *breaks down*, i.e. is not available for some time. As a result of this, the order entry systems are not, or only partially available. This makes that new customer orders cannot be (fully) entered, that systems cannot be updated and that pending queries cannot be resolved.

There are many potential reasons for such a breakdown of an interface. Some of them are technical; such as a file system that is full. In addition, human interventions can cause interface breakdowns. The top and right part of the diagram explain why this happens more often than one would think. Most importantly, when a change is made to one of the 40+ critical systems in the delivery process, it is not at all clear what effect this will have on any of the other systems. This is because of the large number of systems involved, and because their interfaces are not truly managed. As will be explained more in detail, there was a strong focus on system by system performance, and no service level agreements or Service Level Agreements (SLAs) on the interfaces.

Of course, when errors are made people will try to correct them. This is described in the lower middle part of the diagram. Here, it is important to note that doing so is a complex undertaking, requiring considerable skill. Moreover, a lot of that skill had either left the company or was becoming outdated as a result of the ongoing changes in all these systems. Budgets were too low to keep technical expertise at the required levels. As a result, final deliveries were not right-first-time far too often.

In the bottom left of the diagram is shown what vicious cycle the delivery process went into, when such errors happened. Either the wrong kind of conformation letter might be sent because of system errors, or data pollution in the systems as a result of inadequate error corrections might result in mistakes in the final deliveries. In both cases, this would result in customer confusion, customer queries and therefore greater time pressure for the agents to sort out these queries. This would leave even less time for dealing with list of earlier errors to be resolved.

Such a delivery process would, of course, lead to low customer satisfaction, therefore to lower future revenues and futher pressure on budgets necessary to improve performance, so yet another vicious cycle of low performance leading to low revenues leading to low investments leading to even lower performance. This is shown in the bottom of the diagram.

Let us return to this notion of SLAs one more time, as this is essential to understand the nature of the mental turnaround that took place during this day. It is important to understand that the operational cooperation between the parties in managing the PSTN/ISDN delivery and installation process and its supporting IT was based on *SLAs per server*. If the server was performing according to SLA (in terms of Availability and Cost), strictly speaking there could be no issue *vis à vis* Atos even if the complaint levels went through the roof.

This was a clear example of "defensive KPI's": The supplier delivers according to hardware related requirements completely under his control. But still, the performance of the delivery process as a whole was disastrous with a complaint level at 15 % and a rate of First-Time-Right installation at 82 %. Which was not at all surprising with in the delivery process a configuration of at least 11 SLA's/Servers interacting and a total of some 40 critical application programs in the total process, all with their point-to-point interfaces that were not being managed.

This had organizational implications as well. The Server SLA's in the delivery process were obviously not managed by a single person at KPN. At least four to five KPN managers were involved in this process. Each of these, however, would be "involved" solely from their respective functional stovepipe. The same phenomenon could be seen at the other side of the table, with Atos managing individual parts of the system landscape. Communication between all these individuals was preferably by e-mail. It was startling to see that these operational managers hardly knew each other nor understood their process-interdependence.

And this organizational set up also had implications for working relations. At the beginning of the Workshop an atmosphere of "us against them" could still be felt. However, as a result of this group-model building process, the process managers from both KPN and Atos discovered not only the deep-rooted-cause of the friction, but also discovered *why* the friction arose. More importantly, the managers began to see how they could cooperate to mend the flaws. Indeed, managers who at the beginning of the session were at arms length later could be found in the bar well beyond bed time discussing ways and means to enhance the delivery process via what later became known as the "Offensive KPIs".

The enthusiasm to mend the flaws that were now very obvious to everyone made participants step across company borders. The clear joint objective led the operational managers to embrace the idea of going for the business result of the process: driving the complaint level down. In fact, going for customer satisfaction in KPN's consumer market.

At the conclusion of the workshop it was startling to see the high level of satisfaction and the feeling of being able to "deliver against promise", notably from the operational managers. Senior, more distant, managers still were ill at ease with the idea of open end collaboration and abandoning the safe haven of defensive hardware related SLAs. The essential trust to make it work was not yet there.

Following this initial workshop a series of workshops were organized to detail out the KPIs, the sub-KPIs, their measurement, normalization and determine the relevant data sources. In about two months, the Operational and Enabling KPIs were specified and agreed upon. In the process of detailing out, we "discovered" that in order for the Offensive KPI strategy to really work, both parties needed to be aware of the carrots and sticks of KPIs. As such the basis was laid for what later became the "balanced KPI set of five and three" we will return to shortly.

At the senior management level it took considerable time before the results of this process at the operational level, however impressive the mind set change and operational changes that resulted from it, became really well known. There were some presentations to higher management, but really quite some "old chagrain" from the existing, clouded arrangement still had to be dealt with before the drive towards the new incentive driven arrangement could take place at this level as well.

4.4. Phase 3: Detailing out the new arrangement (Apr-Jun 2004)

In the months after this breakthrough at the operational level, a great number of meetings at higher and middle management of both companies took place. In this spring cleaning process, quite some messy remains from earlier disputes were discovered. The annual tariff discussions were perhaps the least oppressive in this respect, although not very helpful. However, what to think of informal compensation deals in kind (to settle 2002 Revenue Guarantee Penalties) that proved over time to be worthless!

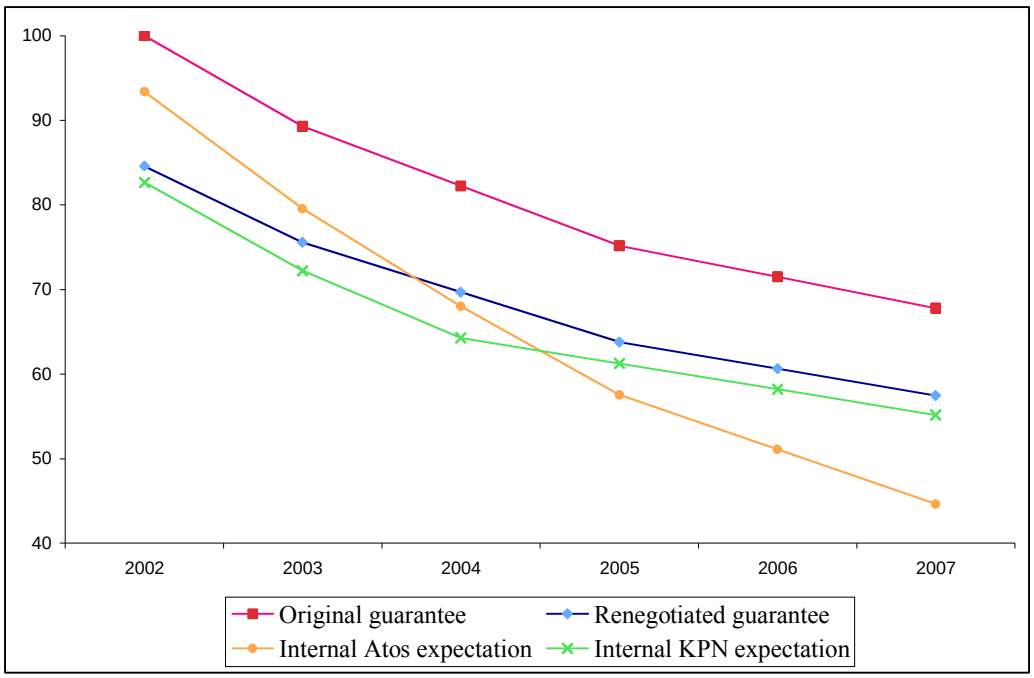

Figure 6: Differences in internal and negotiated revenue expectations (indexed)

One more challenge in this period turned out to be determining the NPV of the consolidated Revenue Guarantees. In this process, it gradually became apparent that each party had made its own internal assessment of the expected (downward) trend of future IT expenditure/income, but had so far not shared this expectation with the other party until that time. Figure 6 illustrates how far these expectations lay apart initially. One can see how the internal Atos expectation was considerably more pessimistic (or, as a pessimist would argue, realistic) than the original internal KPN assessment.

Obviously, if two parties come to the table to negotiate on a certain objective number , while their internal calculations and assumptions lie so far apart, a smooth negotiation process cannot be expected. This incident may serve as yet another illustration of how low the trust and openness levels between the parties had become at that time. It took almost three months to agree on the NPV Gap, and there have been instances where the whole deal was on the verge of collapse. Finally, parties settled on the size of the Pot of Gold and, in doing so, also agreed on the distribution over time of this money over the various KPIs.

The next step in the calculation process was the identification of eight main KPIs. If those KPIs were met fully, the full Pot of Gold would be transferred to the Atos bank account. The supplier side rightfully argued that, if they were to perform to a certain level, they were also dependent on the performance of the buying party as well. Thus, two kinds of KPIs were developed, as can be distilled from Table 1.

Table 1: Distribution of KPI weights across time, firm and aspect

KPIs	2004	2005	2006	2007	Total
Innovation & Redesign	3%	2%	2%	0%	6%
Operational and Enabling KPIs	*6%*	*6%*	*5%*	*3%*	*20%*
Total Cost of Ownership	8%	6%	0%	0%	14%
KPN BU Client Satisfaction	2%	2%	2%	2%	6%
Sell to and with Atos	3%	3%	2%	2%	9%
Total of Atos-directed KPIs	21%	18%	9%	6%	**55%**
Atos wallet share at KPN BUs	6%	12%	6%	3%	27%
IT Governance	3%	6%	2%	0%	11%
Operational & Enabling KPIs	*3%*	*2%*	*2%*	*2%*	*8%*
Total of KPN-directed KPIs	12%	20%	9%	5%	**45%**

Five KPIs (with a host of supporting KPIs via the so-called KPI Tree) applied to Atos performance , but three KPIs applied to KPN's performance as well. Meeting the Atos Origin KPIs would lead to "drawing rights" for Atos and, in fact, payment in cash by KPN. Partial satisfaction of KPIs would lead to a lower amount being paid out. Payment would take place on a year-by-year basis. The construct of the KPN KPIs was such that only in case that and to the extent that KPN would not be able to achieve these performance targets, it would have to remit cash to Atos. What these different categories entail will be described more in detail next. What should be noted here is that it took almost half a year to finally agree on the basics and detailing out of all the sub-KPIs, their means of measurement, their base-lines, their data sources and their alignment between KPN and Atos. For this purpose, a joint KPI Office was set up that managed and monitored the main KPIs and their supportive KPI Trees.

4.5. Phase 4: Incremental operational improvements (Jul-Nov 2004)

In this timeframe managing the relationship on the basis of the jointly defined KPIs took foothold and translated into a normal routine of cooperation between KPN and Atos, notably in the following areas:

The Atos Origin KPIs

- *Innovation*: As of the Summer of 2004, we organized sessions with business leaders of both companies in an informal, club-like, setting. In these meetings, we elaborated on various issues dealing with the challenges to the Telco industry and the ways to take these challenges on. There above, parties were able to tap the brains and know-how of the newly acquired Atos subsidiary SEMA, which had relevant Telco experience in other European countries.
- *Operational & Enabling*: Here we saw drastic improvement of the complaint level as evidenced by Figure 7. Within five months the complaint level was down from 14 % to well in the area of 8 %. Of course, this is good for customer satisfaction. But, on top of this, one should not underestimate the cost impact such improved operational performance may have. After all, hundreds of people are involved with fixing problems in a company the size of KPN. If the error level halves, the number of FTE required to deal with quality issues is also reduced with some 50%...

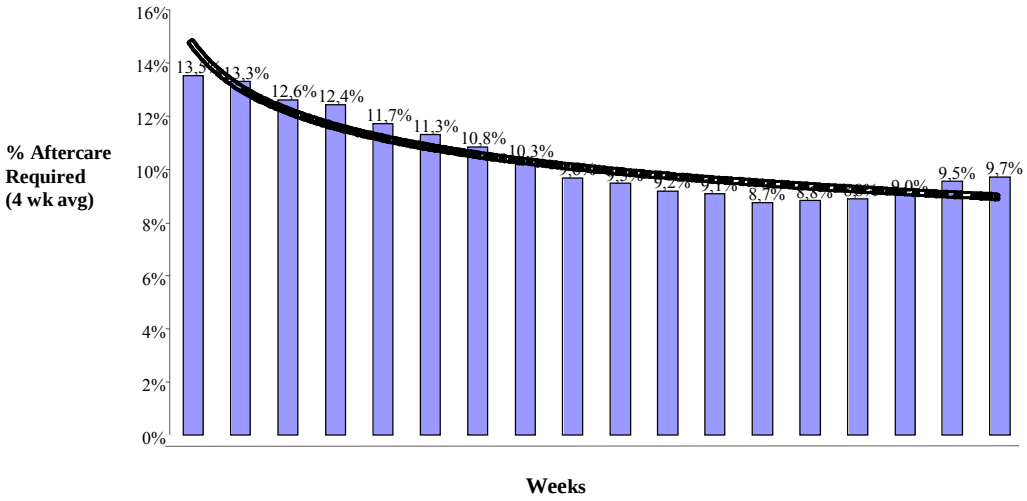

Figure 7: Development of operational performance as a result of joint improvements

- *Total Cost of* O*wnership*: This is a "traditional" KPI in this kind of setting: reducing costs. New initiatives were deployed in this area nevertheless. One of those was the joint "SLA standardization & sanitation process", by which waste resulting from unnecessary diversity was removed and simplicity was achieved. The 2004 target of cost down as per the KPI was detailed out and achieved.
- *KPN Client Satisfaction:* This proved to be one of the most challenging of all KPIs. Here it became clear that the beneath-the-surface-emotions still affected business relations. In order to establish a zero base measurement for the joint KPI process, we deployed an internal KPN Client Satisfaction programme just before the Summer of 2004. Its' format was not unlike the ones employed by KPN

towards its own external customers. The results showed ample "room for improvement", as the euphemism goes. The CPO organization took it upon itself to "sell" the Client Satisfaction KPI and the need for constructive criticism as tool to really manage the turnaround.

- *Sell to, through, and with Atos***:** This commercially oriented KPI was aimed at Atos's willingness to procure services from KPN, either for its own (expanding use) or for its marketing offerings in the industry. One has to understand that Atos Origin as system integrator is active in the market of IT outsourcing: Banking, Insurance, Health Care etc. Normally these are massive projects that are sub-contracted to, amongst others, Telco companies for networks, data management and communication. We have seen, over the course of 2004 and ensuing years, that the cooperation in this area has been very productive. Fulfilling this KPI has a direct positive influence on KPN's top line growth.

The KPN KPIs

- *Atos wallet share at KPN BUs***:** This KPI again was there to make sure that Atos's business volume with the KPN group would at least stay in line with the overall trend in IT spending. In the course of 2004, Atos Origin competed in a big IT outsourcing tender at E-Plus, KPN's German subsidiary. One of the most promising CPO-IT managers was lent to E-plus to jointly manage the whole project together with a German IT expert. The CPO acted in the Steering Committee and made sure that in the definition of the outsourcing requirements the lessons learned at KPN were taken at heart. Atos won the tender (on objective terms) and became E-plus's IT outsourcing partner in Germany. Needless to say, this KPI was met in 2004 and 2005.
- *IT Governance:* This was a real test for KPN's internal IT organization. Was KPN capable of getting a grip on its own IT demand? Remember that, in the past, there were more than 100 SLAs, each with an own IT "owner", each of them dealing directly with counterparts at Atos Origin. During the turnaround negotiations, the CPO introduced the idea of a "Gatekeeper", who would determine whether and to which extent services would be needed in the various IT corners of KPN. It did take some time to engrain discipline into the organization.
  One of the most defective processes was: "payment on time" . KPN's Days Outstanding score was incredible. Imagine more than 1000 invoices floating around in the company in a year. Reconciliation and tight management was a challenge. The KPI Office that the CPO put in place to monitor the development of all KPIs, in this quarter was tasked to challenge and haunt the KPN organizations to pay their monies due in time. In many instances, payment was held back on the basis of minor (quality) disputes.
- *Operational and Enabling:* For our processes to run better via offensive KPIs it was essential not to limit the challenge to Atos only, but to extend it to the KPN colleagues in the process. So, this KPI is in all aspects linked to that of Atos Origin, as can be distilled from Table 1.

4.6. Phase 5: Payment time! (Nov 2004-February 2005).

In the autumn of 2004, it became clear that significant improvements had been made, both in the actual operational performance as in the quality of the buyer-supplier relationship. We already investigated some operational data. Regarding the "soft" aspects of the relationship, data we can present are the results of a survey amongst the key players on both sides that was conducted in October of that year. The respondent group totalled nine people, four from Atos Origin and five from KPN. These respondents came from both the operational and the managerial levels of the organisations. The results are summarised in Table 2. The survey questions focused on the topics of travail, transparency and trust as introduced by Akkermans et al. 2005 in the context of improving buyer-supplier relations. They were taken from existing questionnaire sets in the relevant literature (De Jong and Nooteboom 2000, Johnson et al. 2004, Humphreys et. al. 2004)

These data, however limited the sample size, suggest a major improvement from the nature of the relation just one year beforehand, at the peak of the crisis. On a five point scale, personal trust scores of 4.0 and 3.9 are fairly high. KPN is seen by Atos as a party that keeps its promises (3.7) and that provides trustworthy information (4.3). Nevertheless, these are two very large organisations. It should therefore not come as a surprise that interorganisational trust is only just above average.

Also in terms of transparency, notable improvements have been made. For two parties that did not share expectations about their joint future business just half a year prior to the programme, the cores on "exchange of information" and "informing each other of changes" are very reasonable indeed. Both parties also perceived the relation as relatively transparent, with an exception for Atos's perception of how clearly KPN specified its requirements (which remains, one might add to put this score into perspective, invariably a difficult issue with IT requirements).

From this table, it can be distilled that, both parties recognised the value of developing joint KPIs and, in general, the value of putting time and effort ("travail") into the collaborative process, despite the haggling that apparently was required.

Table 2: Scores on perceived quality of buyer-supplier relationship, Oct 2004

Score 1-5	Atos	KPN
TRUST		
Interpersonal trust	3,9	4,0
Interorganisational trust	3,3	2,8
Other party keeps promises	3,6	3,0
Believe information of other party	4,3	3,3
Other party genuinely concerned	3,3	3,5
TRANSPARENCY		
Customer provides information	3,6	3,5
Customer provides feedback	4,1	4,3
Customer communicates requirements	2,9	3,6
Exchange of information	3,6	3,8
Inform each other when changes	3,9	4,8
POWER		
Joint responsibility for problems	2,3	3,3
Joint responsibility for relation	2,8	4,0
Expectation of long-term relationship	3,5	3,3
Perception of partnership	3,1	3,3
KPN relies more on Atos Origin	3,0	2,3
Attitude towards suggestions by supplier	2,7	3,3
TRAVAIL		

Lot of 'haggling' takes place	4,4	3,8
Modify agreements when changes occur	3,4	3,0
Sharing processes leads to better understanding	3,0	3,8
Developing joint KPIs is useful exercise	4,3	4,3
Devoting time & staff does NOT pay off	3,1	3,0

It is also of interest to note that this closer collaboration did not necessarily mean that parties were enjoying a level playing field. Atos Origin, as the supplier, was still seen as being in a more subordinate role towards the customer KPN. Once more, one might add that this is a fact of life in buyer-supplier relations such as these, and not so much a score that is indicative of the nature of the collaborative climate at this time.

However positive these scores are to be interpreted, there were nevertheless clear differences in maturity levels in the collaboration in other parts of both organisations. One particular telling incident in this respect was the "Coloured Caps session" in November of 2004. As agreed in the Turnaround, the Partner Board would decide in February 2005 whether and to which extent the KPIs would have been met and the monies that consequently would be paid. The KPI office (jointly managed by KPN and Atos) prepared the status of each KPI and offered its findings to a group of senior managers of both companies below Partner Board level. Here we saw constant haggling, notably on in the areas of Operational and Enabling and IT Governance KPIs.

Here, it could be observed that senior managers who had not been involved in the operational processes were adamant in their perceptions of the success, or rather the lack of it, of the turnaround activities. Therefore, we decided to defer the evaluation of the outcome to the operational managers involved directly in the processes affected. We, the authors, wanted to make visible the difference in perception and evaluation between those interested primarily in the operational process and those interested in the outcome of the negotiations. Therefore, we set up a session in November 2004 where we handed out green Caps to those directly involved in the PSTN/ISDN process, orange Caps to management and red Caps to finance and other support functions present. The first author was put in the position of referee. We set up the rule that the green caps were there to talk, and the orange and red caps were there to listen.

Quite early in the meeting it became clear that the Green Caps, the operational people, were wondering: "Why are we here?" For them, there were no issues as the process was running fine and the results were worthy of celebration, as Figure 7 already suggested. Not so, however, for the orange and green coloured Caps. They promptly took over the meeting and started, each from his or her vantage point of view, attacking the mere roots, structure and agreements reached with regard to the Operational and Enabling KPI.

Why? From KPN side it became clear that "we" wanted to pay as little as possible whereas from the Atos side it became clear that "they" wanted to delay and loosen this risky concept of Offensive KPI's by allowing some Defensive KPIs into the framework. After one hour of haggling, the Referee asked the Green Caps to stay and finally spell out their opinion as to the result for 2004 and asked the other coloured caps to continue the discussion outside. Inside, the meeting was quickly settled and so the operational basis for payment time was agreed upon. Outside, the discussion continued for some time and, in fact, Atos did receive some slack for 2004, with the clear rule that operational peformance of the offensive KPIs would determine the score for all future years.

And so, first payment of the “drawing rights” took place in February 2005, as agreed. Over 2004, Atos was awarded 79 % of its potential under the Atos Origin KPI's and KPN had to remit 7,5 % to Atos of its potential 2004 exposure. We had successfully changed the rules of the game, the operational performance and, to a somewhat lesser extent perhaps, the nature of the relation.

5. DISCUSSION: THE OFFENSIVE KPI APPROACH

In this Section we extract from this particular case setting those elements that appear to be applicable to a broader set of supply network settings where buyer-supplier relations are in need of improvement. We first summarise the overall Offensive KPI process: its' inputs, outputs and business results and then look at the four main inputs to the Offensive KPI process somewhat more in detail. We round off with some limitations and opportunities for this approach.

5.1. Inputs, outputs and business results

Figure 8 summarises the main inputs, outputs and results of the offensive KPI approach, as well as their key interrelations. It shows that this approach combines four sets of activities that can be seen as the *inputs* from the approach to the change process:

1. Top management strategy alignment meetings to redefine the buyer-supplier relation;
2. Operational process workshops for mutual understanding causal interrelations;
3. Modelling activities to integrate financial, operational and customer-facing performance indicators;
4. Mid-level management contract negotiation sessions to align contractual arrangements with current business realities.

We will discuss these four sets of activities more in detail further on.

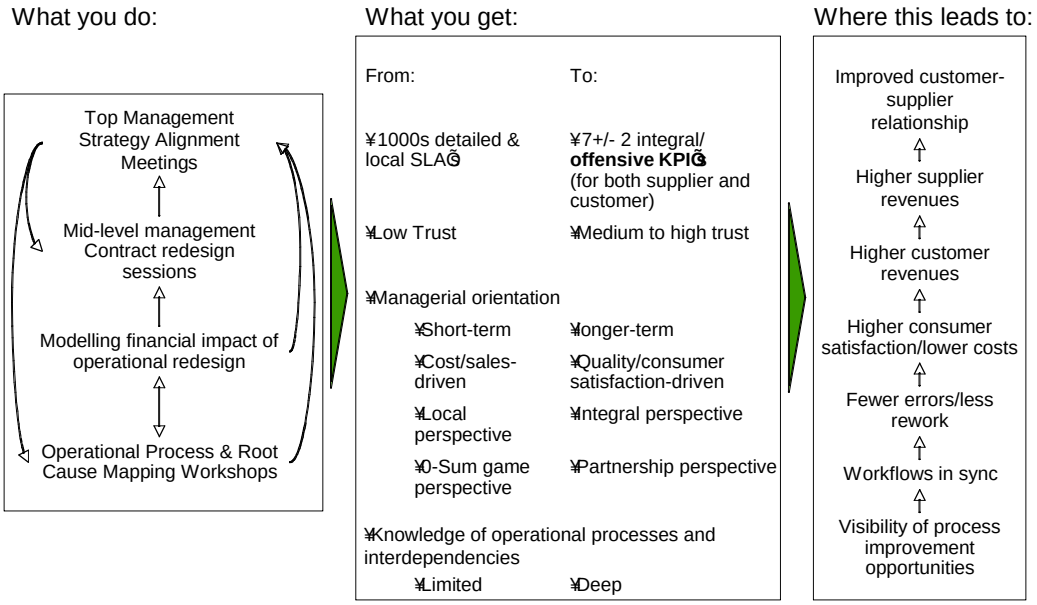

Figure 8: Inputs, outputs and business results of the Offensive KPI Approach

Figure 8 also shows the main direct *outputs* of the KPI process. It points out that this was considerably more than a vast reduction of the number of performance indicators or SLAs, however significant this change may have been. Also, we would argue that

this process changed the managerial orientation on both sides fundamentally, much more in line with a successful partnership model: long term, quality and end customer-driven, from an integral supply network perspective, with deep knowledge of operational processes and interdependencies.

In business bottom-line terms, the offensive KPI process made joint process improvement opportunities more visible and created the shared mindset to address these. This led to higher quality in execution. This has the combined effect of reducing rework and thereby labour costs as well as improving customer satisfaction with service delivery. That then leads to higher revenues from end-customers for the buyer side of the supply network. And that, through the mechanism of offensive KPIs, where the supplier is rewarded for improvements in end customer service performance, leads to higher revenues for the supplier. This win-win approach further improves the buyer-supplier relationship. In short: *focus on costs, and quality goes down; focus on quality, and costs go down* as has become the strap line of the chief procurement office since this turnaround process.

5.2. Top management strategy alignment: Redefining the relation

One essential ingredient for this turnaround process to work is that top management of both parties involved should be willing and able to redefine the relationship. In this case as in many other instances of service supply networks, the implicit or even explicit assumption is that the relationship is one of *buying services*. This is rarely correct with strategic partnerships such as the one we have been investigating in this article. Rather, the relationship should be one of *contracting performance*. Only if both sides understand and agree that this redefinition is needed and possible, this change process can be successful. However, the "road to hell is paved with good intentions", as the saying goes. There are many, many instances where top management of two companies agrees on the need for a fundamental change in behaviour, but the day-to-day operations and how these are managed does not change. Therefore, more is needed.

5.3. Operational process focus: joint causal mapping of the interrelations

The soft underbelly of many top management agreements is the hard world of daily operations. As indicated repeatedly in this article, operations in supply networks can be very complex indeed, with large numbers of well-meaning highly experienced people pushing buttons and pulling levers in all sorts of directions. And although these people may mean well and have a long experience, the complexity of the dynamics of these networks is simply too much to handle. Therefore, the workshops in which operational people from all relevant parts of both parties came together to map out the entire process were an essential prerequisite for improving performance.

There are also important soft benefits to this, apparently hard and tangible activity, of mapping out the complete process and its causal interrelations. It is quite common that, when all stakeholders come together for such a mapping workshop, that many personal introductions need to be made. People are often not acquainted with one another, nor are they familiar with the processes. Through the joint mapping process, more appreciation for the other party's difficulties and achievements is attained, and personal acquaintance is also made. Nooteboom (2002) calls this process *habituation*: people get used to each other and so interpersonal trust can grow. And

then, the more trust is attained, the more participants feel free to disclose their more sensitive thoughts regarding process improvements…

5.4. Linking KPIs: from operational to customer to financials and back

Traditionally, KPIs and contracts are the domain of finance. But, as has finance professors Kaplan & Norton (1992, 1996, 2004) have noted repeatedly, managing a business on financial data alone is like driving a car by looking only at the rear-view mirror. Financial performance show the outcomes of customer behaviour and operational efficiency, and these two are both driven by execution quality of operations. So, any good performance control panel should be a "strategy map" (Kaplan and Norton 2004), where operational performance, customer perception of performance and financial data are monitored in relation to one another. Getting this notion of interrelatedness of multiple functional areas across to all stakeholders is one essential part of effective management of service supply networks.

The offensive KPI approach is one way of implementing this notion of a strategy map to interorganisational relationships. It not only connects operational performance, customer-facing performance and financial performance of a single organisation, but it also shows how the strategy maps of multiple organisations are causally interlinked. By defining customer-facing performance for the supplier as much as possible in terms of end-consumer-facing performance of the buyer, it becomes clear that both parties are pursuing similar goals: united they will stand, on their own they will both fail. Getting this notion of "commonality of ultimate goals" across to the stakeholders in the different organisations involved is another essential part of effective management of service supply networks.

5.5. Mid-level management sessions: realignment of contracts and reality

In the case discussed, as well as in many others, managerial effectiveness suffers from both the shadow of the past as well as the shadow of the future (Nooteboom 2004). Contractual arrangements set up between the network partners at its initial stage are always driven by more or less implicit assumptions about the state of affairs between the parties and in the market place. These assumptions typically become disconnected from reality in many rapidly-changing market environments. Similarly, contractual arrangements are also determined by the expectations of what the future will hold in store for the parties involved. As the market outlook changes, so will these expectations, but the contract will not be adjusted automatically. As time goes by, the contractual set-up becomes more and more dysfunctional in driving performance.

We have seen in this case, that a great deal of work has to be spent on realigning contractual arrangements to present-day realities, if improved collaboration is to be sustainable. Typically, this required substantial effort from mid-level management, with final endorsement by top management from both sides.

We would like to note here, that one very effective way of adding quality and speed to this process is by translating the causal strategy map discussed above into a quantified simulation model. This will make explicit the often implicit assumptions about the quantitative nature of the causal interrelations in these maps: how much money will be actually be saved if rework drops with X %? How much will customer satisfaction rise if first-time-right installations increase with that same X %? And to what revenue increase will that lead?

One may object that retrieving hard data on such numbers is often very difficult. We would counter that managers will take such interrelations into account in their own fuzzy mental calculations anyway, so perhaps it is best to have such numbers out in the open where they can be scrutinized and where their robustness to modest changes in values can be assessed. Contractual discussions based on the simulation outcomes of such a quantified model, or even better on different scenarios for future development with this model, can proceed faster and with higher quality. In a related case, where we looked at the redefinition of the contract with the outsourced call centre for KPN, we used a system dynamics simulation model (Sterman 2000) for this purpose.

5.6. Limitations and opportunities

We, the authors, feel convinced that the Offensive KPI approach is applicable to many service supply network settings. We base this confidence on our own experiences in this case and others, but also on the knowledge that the constituent parts of the approach are well-known and tested in various other domains. Our combination of them and our application of this combination to this particular area may be a new one, but the parts themselves cannot be called business practice innovations anymore.

We also feel that this approach is not, by any means, a “silver bullet” for improving buyer-supplier collaboration. It can prove to be highly instrumental in taking the relation and the quality of collaboration and joint performance to the next level for some time/the short-term, but not for eternity/the long-term. As the literature on alliance performance suggests, and as is also our own experience, one should expect the unexpected in business alliances. If you are doing fine this year, then something will happen next year that invalidates the arrangements you made and you will have to recommence, albeit from a higher level of relationship maturity than last time. As in our personal lives, relationships require lifelong attention and effort to stay vital and productive.

7. CONCLUSIONS

In this section we round off with our four main conclusions.

7.1. Service supply networks are the new dominant life form

Firstly, as the case setting we described illustrates, service supply networks really are the new dominant life form in the network economy. Easily a dozen of semi-independent organisations have to co-operate to provide one specific service to a customer. Unfortunately, most of our managerial textbook theory is still based upon the implicit assumption of the single unified firm where there is unified command. We need new rules (Kelly) in this new economic reality, and this paper is a modest effort towards this goal.

7.2. Offensive KPIs can align buyer-supply collaboration towards optimal market performance

Traditionally, goals and objectives of supplier and buyer are not aligned. If one party gains, the other loses. From a supply chain & network perspective, this is not true. If one party fails to perform, performance to the final customer will suffer to the detriment of the entire network. Through the notion of offensive KPIs the rules of the game are changed. Here, suppliers are rewarded not so much for the service they deliver directly, but rather for the contribution they make to the performance of their customer, and in particular to the performance towards their customer's customer. In this way, goals and objectives become aligned and both parties are given strong incentives to collaborate.

7.3. Joint development of offensive KPIs takes place in a dynamic and complex organisational setting

The reality of business is that there "is never a dull moment". Rarely will there be time to engage in such a joint offensive KPI specification process without external disturbances. The customer base, the competition, the technology, the job market, the financial market, the governmental setting, they all will create disturbances, foreseeable and unforeseeable ones. As our case setting illustrates, managers are well advised to embrace such inevitable disturbances and use them to seize the moment. In the KPN-Atos case, a crisis in the relationship was used effectively to "buy" time and commitment to redefine the relationship from "buying services" to "contracting performance". The offensive KPI approach was simply instrumental in this redefinition.

7.4. People make it happen, models make it comprehensible

Defining offensive KPIs is not easy, but it can be done. It requires a thorough understanding of how the direct performance from supplier towards buyer gets translated into the performance of the buyer towards the end customer. Such understanding can only be gained through an intensive and constructive dialogue between all parties involved. So, *people make it happen*. But if this dialogue is to remain to the point and fact-based, models are excellent tools to structure and inform the communication process. In the offensive KPI approach, these models come from

the system dynamics methodology toolbox. These tools are partly qualitative and conceptual, such as causal loop diagrams that show the interrelations between operational performance, customer-facing performance and financial results. Partly they should be quantitative albeit based upon the qualitative conceptual models, to add greater precision and clarity to the assumptions made and to aid in the redefinition of suitable new contractual arrangements. After all, it remains a counter-intuitive notion that, in buyer-supplier relations, *focussing on cost makes quality go down, but focussing on quality makes cost go down*. Models can make this strange notion plausible and understandable.

REFERENCES

Akkermans HA, Bogerd P, Vos B (1999) ''Virtuous and vicious cycles on the road towards international supply chain management'' *International Journal of Operations and Production Management*. 19 (5/6) 565-581.

Akkermans HA (2001): ''RENGA: A systems approach to facilitating inter-organizational network development.'' *System Dynamics Review* 17 (3) 179-193.

Akkermans, HA & Vos B (2003) Amplification in service supply chains: An exploratory study from the telecom industry. *Production and Operations Management* 12(2), 204-223.

Akkermans, HA Bogerd P, van Doremalen P (2004): Travail, Transparency and Trust: A case study of computer-supported collaborative supply chain planning in high-tech electronics. *European Journal of Operational Research* 153, 445 –456.

Akkermans, HA & Dellaert NP (2005) The rediscovery of industrial dynamics: the contribution of system dynamics to supply chain management in a dynamic and fragmented world. *System Dynamics Review* 21(3), 173-186.

Anderson E & Jap SD (2005) The dark side of close relationships. *MIT Sloan Management Reviews* 46(3), 75-82.

Anderson EG & Morrice DJ (2000), "A Simulation Game for Teaching Service-Oriented Supply Chain Management: Does Information Sharing Help Managers with Service Capacity Decisions?" *Production and Operations Management* 9(1), 40–55.

Anderson EG, Morrice DJ, & Lundeen G (2005) The "physics" of capacity and backlog management in servie and custom manufacturing supply chains. *System Dynamics Review* 21(3), 217-248.

Ariño A, & de la Torre, J (1998) Learning from failure: Towards and evolutionary model of collaborative ventures. *Organization Science* 9, 306-325.

Aubert BA, Rivard S, Patry M (2004) A transaction cost model of IT oursourcing. *Information & Management* 41,921-932.

Barthelemy J & Geyer D (2005) An empirical investigation of IT oursourcing versus quasi-outsourcing in France and Germany. *Information & Management* 42, 533-542.

Boyer K & Metters R (2004) Introduction to the special issue on "service strategy and technology application". *Production and Operations Management* 13(3), 201-204.

Business Week (2006) Outsourcing hasn't hit its peak. *Business Week Online*, February 17, 2006, accessed at www.businessweek.com.

Choi TY, Dooley KJ & Rungtusanatham M (2001) Supply networks and complex adaptive systems: control versus emergence. *Journal of Operations Management* 19(3), 351-366.

De Jong G. & Nooteboom B (2000) *The causal structure of long-term supply relationships*, Kluwer Academic Publishers.

Doz YL & Hamel G (1998) *Alliance advantage: The art of creating value through partnering*. Harvard Business School Press, Boston.
Doz YL (1996) The evolution of cooperation in strategic alliances: initial conditions or learning processes. *Strategic Management Journal* 17, 55-83.
Frohlich MT & Westbrook R (2001) Arcs of integration: an international study of supply chain strategies. *Journal of Operations Management* 19(2), 185-200.
Fyners B, Voss C & de Burca S (2005) The impact of supply chain relationship quality on quality performance. *International Journal of Production Economics* 96, 339-354.
Griffith DA, Harvey MG & Lusch RF (2006) Social exchange in supply chain relationships: The resulting benefits of procedural and distributive justice, *Journal of Operations Management* 24, 85-98.
Hameri A & Paatela A (2005) Supply network dynamics as a source of new business. *International Journal of Production Economics* 98, 41-55.
Heskett JL, Sasser WE & Schelsinger LA, (1997) *The Service Profit chain: How leading companies link profit and growth to loyalty, satisfaction and value*. Free Press, New York.
Hill AV, Collier DA, Froehle CM, Goodale JC, Metters RD & Verma, R (2002) Research opportunities in service process design. *Journal of Operations Management* 20(2), 189-202.
Humphreys PK, Li WL & Chan LY (2004) The impact of supplier development on buyer-supplier performance. *Omega* 32(20, 131-143.
Ireland RD, Hitt MA & Vaidyanath D (2002) Alliance management as a source of competitive advantage, *Journal of Management* 28(3), 413-446.
Johnson DA, McCutcheon DM, Stuart FI & Kerwood H (2004) Effects of supplier trust on performance of cooperative supplier relationships. *Journal of Operations Management* 22(1), 23-38.
Johnston R (1999) "Service operations management: return to roots". *International Journal of Operations and Production Management*, 19(2), 104–124.
Kaplan RS & Norton DP (1992). The balanced scorecard: measures that drive performance. *Harvard Business Review* 70, 71-79.
Kaplan RS & Norton DP (1996). *The Balanced Scorecard: Translating Strategy into Action*. Harvard Business School Press, Boston.
Kaplan RS & Norton DP (2004). *Strategy Maps. Converting Intangible Assets into Tangible Outcomes*. Harvard Business School Press, Boston.
Kelly, K. (1998) *New Rules for the New Economy. 10 Ways the network economy is changing everything*. Fourth estate, Londen.
Kleijnen JPC & Smits MT (2003) Performance metrics in supply chain management. *Journal of the Operational Research Society* 54, 507-514.
Kumar N Scheer LK & Steenkamp JEM (1995) The effects of supplier fairness on vulnerable resellers *Journal of Marketing Research* 32, 54-65.
Mittal V, Anderson EW, Sayrak & Tadikamalla P (2005) Dual emphasis and the long-term financial impact of customer satisfaction. *Marketing Science* 24(4), 544-555.
Neely A (1998) *Measuring Business Performance*. Profile Books Ltd, London.
NieW & Kellogg D (1999), "How Professors of Operations Management View Service Operations" *Production and Operations Management*, 8(3), 339–355.
Nooteboom B (2002) *Trust: forms, foundations, functions, failures, and figures.* Edward Elgar, Cheltenham UK

Nooteboom B (2004) *Inter-firm collaboration, learning and networks: An integrated approach* Routledge, London.
Oliva R & Sterman JS (2001) Cutting Corners and Working Overtime: Quality Erosion in the Service Industry. *Management Science* 47(7), 894–914.
Osborn RN & Hagedoorn J (1997) The institutionalization and evolutionary dynamics of interorganizational alliances and networks. *Academy of Management Journal* 40(2), 261-278.
Roth AV & Jackson WE (1995) "Strategic Determinants of Service Quality and Performance: Evidence from the Banking Industry," *Management Science* 41(11), 1720–1733.
Rust R & Chase R (1999) Introduction to the Special Issue on Service Marketing and Service Operations, *Production and Operations Management* 8(3), 207.
Saxton T (1997) The effect of partner and relationship characteristics on alliance outcomes. *Academy of management journal* 40(2), 443-463
Spina G & Zotteri G (2000) The implementation process of customer-supplier partnership: lessons from a clinical perspective. *International Journal of Operations and Production Management* 20(1), 1164-1182.
Stanley LL & Wisner JD (2001) Service quality along the supply chain: implications for purchasing. *Journal of Operations Management* 19(3), 287-306.
Sterman JD (1989) Modeling management behavior: Misperceptions of feedback in a dynamic decision making experiment. *Management Science* 35: 321-339.
Sterman JD (2000) (*Business Dynamics: Systems Thinking and Modeling for a Complex World*. McGraw-Hill, New York
Vennix JAM (1996) *Group Model-Building: Facilitating Team Learning Using System Dynamics*. Wiley, Chichester.
Zviran M, Ahituv N & Armoni A (2001) Building outsourcing relationships across the global community: the UPS-Motorola experience. *Strategic Information Systems* 10, 313-333.