

# Transformation of IT systems – socially acceptable, efficient, successful

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**Abstract.** Companies today encounter rapid, radical and near-constant changes while customer expectations towards quality and service are increasing. It has become imperative for IT to respond and adapt to those changes. The traditional role as a simple technology provider does not fulfill the need. IT departments feel huge pressure to adapt towards a lean, responsive and service oriented organization and to accept a new role of an enabler, working side-by-side with the business as a partner. A pre-condition for this step is to control the system and process landscape. A transformation of the existing IT is getting a critical success factor. The aim of this article is to explain fundamental reasons for investing in IT transformations, taking the telecommunications industry (Telco) as an example. It discloses wrong transformation strategies leading to costly failures and describes the possibility how to conciliate economic efficiency and the implementation of a social acceptable system transformation.

**Keywords:** Business transformation, IT transformation, Portfolio Management, Project Management

## 1 Introduction

Companies using Information Technology (IT) know the challenge of managing existing systems, often referred to as “Legacy”. Legacy is a result of natural entropy which finds its origin in a parallel growth of the IT and the company activity. The complexity of legacy is proportional to several parameters:

- The choice of organization (internal, partially or completely outsourced).
- The choice of architecture and products (recurring maintenance and license costs).
- The speed of growth of the company in its first years.
- The amount of available investments for IT systems.

If there is a domain which is characterized by the mentioned parameters, it is the Telco industry. The initiation of an IT transformation gets necessary as soon as a complex legacy environment strikes a difficult economic environment. For the Telco industry, the reduction of margins and the de-regulation created an “explosive cocktail”.

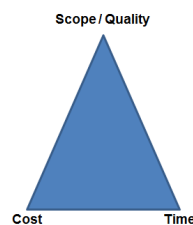
Some operators anticipated the situation. The majority find themselves today with their back to the wall and started, or plan to start a transformation of their IT.

## 2 Why is there a need for transformation?

The principal idea of a transformation is to reduce the costs for IT in proportion of the company revenue, to reduce the IT/Sales ratio<sup>1</sup>. Today IT costs represent nearly 5% of the telecom revenues (in other industries it is about 2%); there is a rising trend of the costs, almost in line with the age of the operator [2]. A second reason is the aim to protect margins. While trying to reduce recurring costs (OPEX) there is a growing pressure to mobilize company resources towards investment activities (CAPEX). Investments enable the ability to react quickly to market developments. At the same time operators strive to minimize their Time to Market (TTM)<sup>2</sup>. The reasons of the pressure to fast reaction are an acrimonious competition between the operators since several years and a change in the traditional value chain. Former partners of Telco operators like device manufacturers and internet service providers started to enter in the market. The main motivations for a system transformation are therefore:

- A reduction of recurring costs
- A higher efficacy of investments (less CAPEX for the same result)
- A significant increase of projects efficiency, focus to reduce the project duration

The transformation objectives impact simultaneously two of the three axes of the iron triangle for project management shown in Figure 1 – the axis cost and time.



**Fig. 1.** Iron triangle of time, cost & quality [4]

An impact on delivery quality or scope is not an option for an IT transformation. In a competitive and volatile market the customer relation is a key element. The choice for the transformation delivery and implementation strategy gets therefore the critical success factor. The question is: What are conceivable options when the information systems are in a situation of crisis<sup>3</sup>?

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<sup>1</sup> The proportion of costs for information systems and the company revenue

<sup>2</sup> The TTM is the average time from the idea conception until the final rollout of the solution in the market. The average TTM came down from an industry standard of about six months in the middle of the years 2000, to an average of about three months nowadays.

<sup>3</sup> Our definition: IT does not meet objectives for cost, time to market, functionality or quality

**First option, transfer the problem.** This option is not addressing the real problem but transferring the responsibility to a specialised company acting as a “partner”. Experience shows that outsourcing has only a positive effect on IT when a certain degree of standardization has already been achieved [2]. Also, there must be a balance of (perceived) power for successful outsourcing negotiations [3]. Starting an outsourcing negotiation in a situation of crisis is putting the outsourcer necessarily in a weak negotiation position. Profitable efficiency of outsourcing is linked to the context, timing and the scope / activity. We claim that *investing in your own technical organization and optimizing roles and responsibilities increases the likelihood of achieving transformation objectives significantly more than outsourcing the problem.*

**Second option, transform the IT.** This option has the objective to reduce complexity by replacing and decommissioning existing systems, applications, infrastructure and optimizing the organization. There are several reasons motivating this choice:

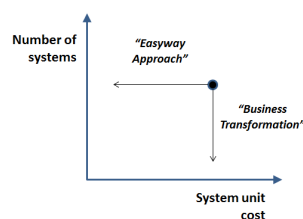
1. The need to control the transformation delivery (focus on risks, costs and quality).
2. The need to keep control of the legacy, to avoid any impact on business strategy.
3. The need to comply with certain ethical or political principles.

Next, this article will focus on the second option.

### 3 The bad recipes

There is a certain number of “routines” to achieve cost reduction objectives. Even if some of these routines might be efficient in the short-term, the mid-term impacts are important. Two dimensions influence the costs for the information system:

- The number of systems
- The total cost of ownership (TCO)<sup>4</sup> per system.



**Fig. 2.** Dimensions of cost for IT system

The IT executive could get “trapped” by two misleading strategies.

<sup>4</sup> The TCO is a combination of maintenance cost and recurring CAPEX for new products. It is direct proportional to the economic efficiency of the supplier (internal or external).

**Misleading strategy 1, reduce recurring costs via elimination.** The first strategy we want to refer to is what we call the « Easyway Approach ». It is about reducing the TCO per system without neither changing the system architecture nor the system structure. Although this is a necessary activity, without complementing this approach with some structural changes the benefits will not be efficient in a long-term perspective. We named this strategy the “Easyway Approach” as a reduction of cost is fundamentally incontestable within a short-term perspective. This strategy is chosen by IT executives who either have low technical knowledge, who lost their credibility towards their business stakeholders or who are unable to sell any other strategy. The most risky approach is to cut maintenance and support cost for IT components. Even if there seem to be a measurable cost reduction, there are important side effects:

1. Creation of operational risks in different parts of IT with potential impacts on business in case incidents occur.
2. Impossibility to calculate any business case for IT investments. In a situation of low or even zero cost for the operation of an IT system it gets impossible to calculate a return of investment (ROI), as there is no economisation achievable.

If operational risks are cumulated, the likelihood to end up in a business critical crisis is increasing. IT executives having applied this strategy do not have any other choice than to constantly resist the pressure to system changes to stay in control. The dialogue with business stakeholders turns into a conflict. As a consequence, not many CIO's in Telco stay longer than four years in their position [1].

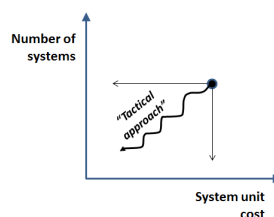
**Misleading strategy 2, transform the business.** The principle of the approach we named “business transformation” is about adapting the IT whilst transforming the business processes. This approach is driven by the postulate: the complexity of IT and its costs are correlated to the complexity of the business processes and a high variability of requirements [2]. It does not imply that the business is ready for a business transformation to facilitate an IT transformation. In this context, the only conceivable solution to reduce costs is to replace complete system domains with one or more integrated products provided by one or several editors. The expectation is a reduction of recurring costs by reducing the number of systems, not necessarily the cost per system. One challenge is that nearly no telecom package is a finalised product. The majority of product editors compensate low implementation costs with high rates for consulting or development. Another challenge is that business executives do not necessarily support an alignment of their processes to “out of the box” functionalities. Hence, there is a choice of two possible transformation failures:

- Either the product is not supporting the current (or expected) business processes
- Or the product has to be adapted via development, the ROI cannot be realized

If such a strategic decision has not been taken on CEO or even on shareholder level, to officially engage the whole company in the transformation, this delivery strategy is doomed to fail. We would even say that such a transformation needs to be concomi-

tant with a radical change of the company like a market repositioning, rebranding, sales or fusion to justify the business risks.

**The iterative, tactical approach.** Our conclusion is to apply a tactical and step-by-step approach. This type of intervention implies imperatively a high IT executive implication as he is expected to go into operational details and adopt an entrepreneur management style. The objective of the tactical approach is to reduce the number of systems (complexity) as well as the TCO per system without creating major constraints for the business strategy execution.



**Fig. 3.** - A tactical approach for IT transformation

We distinguish the following essential key factors for the successful realization of the IT transformation delivery strategy:

- Leadership
- Measuring and Communication
- Delegation and “Professionalization”
- Planning and Piloting

#### 4 The realization of a socially acceptable IT transformation

**Leadership.** Since the industrialization of information technology there is a tendency of a pure administrative and statistical management of IT. It is essential to not limit the decision process to a distant interpretation of statistics. There is a component purely linked to (technical) competencies, the capability for IT executives to judge the efficiency of their teams and their suppliers. The ability to motivate is a critical skill for anyone leading a technology team. Technical competence is a pre-condition to convince engineers. A better understanding and actively shaping motivation can lead teams to greater success. We claim that it is indispensable in a situation of structural change of the IT to have executives being able to get hands on in technical and operational details: *An entrepreneurial management*. The role of the IT executive should be a partner role, influencing choices in technology, inspiring the team to take risks and managing people toward peak performance by creating positive emotions and motivation – by creating a vision.

**Measuring and Communication.** The CIO has to define a set of KPIs and governance metrics to measure the performance of the IT department. Without a regular reporting many important decisions are taken “blindly”, discussions with business executives on a solid basis get prevented. In such a scenario delivery commitments can only be given for small system improvements, the dialogue stays emotional. The establishment and the debriefing of an agreed KPI catalogue is a key item for the communication of the CIO. It needs to be regularly shared in public with all involved colleagues and partners, not only to management teams. Bonus payments, personal objectives and individual feedback need to be linked to the KPI objectives.

**Delegation and Professionalization.** One big challenge in IT is an aging workforce [5]. Many HR departments lack career paths, constant trainings, certifications and performance validation for the technical experts. IT departments have seen a considerable part of their colleagues evolving to a status of “something senior” without having formally validated their competences. The result is an increase of OPEX to the disadvantage of the technical productivity and without any efficiency increase in support functions. This is one of the fundamental factors of the upturn of IT costs in industrialized countries. Our recommendation for the technical profiles for an efficient execution of the IT transformation:

- Technical people, the majority being able to go into technical details (code level).
- Team leaders taking the full accountability of functional domains E2E<sup>5</sup>.
- Project managers driving incremental changes, on legacy and the transformation
- Limited amount of system architects to keep control on the transformation vision.

An organizational transformation might be necessary before starting the system transformation. We recommend the following approach:

1. *Announcement of the change.* An open communication is essential. It should be direct and create the feeling of urgency for a favorable acceptance of a change.
2. *Simplification of job descriptions.* In the course of time many job titles have been defined. During a transformation it is important to focus on basic competencies.
3. *Define and centralize a professional team of project managers.* The main responsibility is to focus on planning, reporting and management of investment and risk.
4. *Distribute the responsibility for the TCO<sup>6</sup> to the technical lines.* Every platform and application needs a dedicated “owner” who is fully responsible for the technical strategy, the need of external support and the validation of changes on his platform. The ability to calculate such measures becomes a priority.

**Planning and Piloting.** Starting an IT transformation, we recommend to first concentrate on the basics, the “things to get right”:

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<sup>5</sup> E2E = end to end, e.g. for technical domains like “Billing”, “CRM”, etc.

<sup>6</sup> TCO includes the total costs for CAPEX and OPEX for a dedicated technical domain.

- *Improve the level of confidence for your delivery capacities.* This can be achieved by improving timelines and cost for delivering the basic needs. Quick wins can be realized by bundling activities, for example by introducing release management or commercial periods, by using agile methodologies and by defining a strict project delivery process with well-defined delivery artifacts. Project success has to be reproducible, at a high quality and independent of single human resources.
- *Request formal management expectations and objectives for IT.* In many companies, IT is considered as a commodity and a support function with no defined mission. It is impossible to create a vision for an IT transformation without clear objectives aligned with the company strategy. In case objectives are not provided by top management, we recommend determining the IT strategy by defining business assumptions shared with the business stakeholders, and therefore taking risk.
- *Vision of the future IT architecture.* The technical lines should participate in the definition of the vision of the IT transformation and the delivery strategy for each technical domain instead of the CIO imposing a transformation vision.

It is mandatory to constantly align the business strategy with the transformation delivery strategy, ideally with each business unit. The project roadmap should consider transformation deliverables as a technical enabler supported by the business case of a business project. Such an alignment is only possible if there is a constant and efficient communication between IT and the business stakeholders. This alignment task is part of the responsibilities of the Portfolio Management. The role of the CIO is to follow the execution of the IT renewal plans in detail and to share the status in public.

Any investments or integration requests in IT, like purchasing third party services or tools, must be prevented. IT should be the exclusive provider of IT related services – and the only responsible entity for IT costs. Only in such conditions the CIO is able to guarantee a long-term view to preferred suppliers with positive impacts on costs and system complexity. In case a business project gets a higher priority than the transformation, this dependency has to be highlighted before the project kick off. The impact on the transformation objectives have to be explicitly approved by management.

## 5 Impact

By implementing the recommendations above, we achieved in the first year at one of the top three telecommunication operators in Switzerland:

- A reduction of recurring costs by 28%, of the external IT OPEX by 60%.
- An increase of project efficiency by reducing the TTM by 40%, the amount of critical incidents per week by 60% (reduction of post rollout incidents) and by introducing agile methodologies (25% of the projects scope delivered in agile mode).
- The business strategy has not been impacted, no business project got stopped nor has any freeze period been requested.
- No outsourcing or layoff was necessary to achieve the cost reduction objectives.

## 6 Conclusion

The *main critical success factor* for the execution of what we call a “tactical transformation” is *an entrepreneurial management* with IT executives having the technical competences to control and lead changes in the necessary technical detail, as well as to motivate their technical teams and challenge the preferred suppliers and partners.

We call this approach socially acceptable as we recommend focusing on existing company competences and people. Many CIOs put their attention mostly on technical aspects while ignoring the people and organisational challenges [5]. We believe that leveraging the people dimension is a key item of achieving desired results and realising optimization potentials, without putting the business at risk. In this context we consider outsourcing and layoffs to realize short-term cost reductions as a risk and inefficient instrument. Outsourcing should be reduced to standardized areas only.

Pre-conditions to recognise benefits are the measurement of performance based on shared KPIs, the implementation of an efficient organisation including a reduction of technical roles and the delegation of responsibilities with a strong link to personal objectives. To our experience, only the repartition of costs and their publication already drive behavior and performance and have an automatic regulatory effect. It is important to increase the perceived value of technical functions by constant trainings, a well-defined career path and a competitive salary level.

We see professional and centralized project and portfolio management as an indispensable activity to facilitate the interaction and expectation management with stakeholders, and to efficiently align the growth objectives with the technical vision of the transformation. Centralized project management is a major driver in implementing and respecting project delivery processes. Having technical lines or project owners managing projects create inefficiencies and is a potential for conflict of interests.

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