

IT Transformation Program & Reporting Structure - a generic example (and starting line-up)

IT transformation is usually part of the overall digitisation program of the company. There can be many reasons for this, only a few of which are mentioned here:

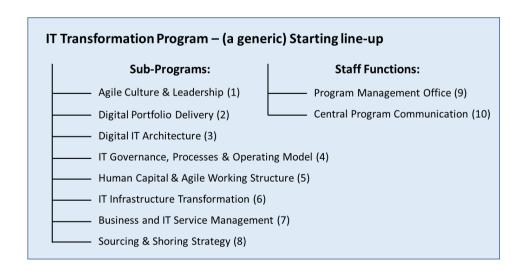
- organically grown system landscape with high complexity and legacy technologies
- very elaborate and lengthy collaboration model within the IT projects
- restricted scalability due to unclear and inconsistent sourcing strategy
- lack of digital skills and experience in the IT workforce
- limited innovative ability of the IT organisation

A technology-driven transformation of the company is not possible without a comprehensive, fast and strict IT transformation. Business goals can be to create a new business model or to adapt the existing one based on a new digital platform, to enter the market with new digital products or production and supply chain processes or to take business advantages out of the use of advanced data analytics and artificial intelligence. To achieve these goals, a "Digital Delivery" with high speed and fast scalability must be established.

In the following text we present a generic structure of an IT Transformation Program and a matching Working & Reporting Structure for the entire IT organisation. In these examples and starting line-ups we do not distinguish between local and global IT, but they should ideally be transformed and managed within the same basic concepts and structures.

IT Transformation Program

Below you will find a generic project structure for an IT transformation program (ITP). In this example the ITP consists of 8 subprograms and 2 staff functions, which are listed in the following overview:



Agile Culture & Leadership - Culture Transformation Program (1)

"Culture eats strategy for breakfast", a phrase originated by Peter Drucker puts it in a nutshell: The best strategy is of little use if it is not backed up by an appropriate corporate culture. Any company disconnecting the two is putting their success at risk. Furthermore, you need appropriate capabilities



and skills in your organisation. To create true organisational transformation, strategy, capabilities and culture need to be designed together and aligned.

Many companies have established a Lean Culture in which a continuous improvement process is key. For the processes to be managed efficiently and for the company to achieve its key performance indicators, a culture of improvement is needed around the processes. After all, the culture of continuous improvement is only geared towards preserving and optimising what already exists. It is little suited for innovation, digital transformation, let alone a disruptive change in the business model. So today, the most companies dealing with digitisation want to implement an "Agile and Digital Corporate Culture", which should be still lean – in some process areas – and more or less strongly connected with a movement so called "New Work" (see more in our paper "Movement towards Agile & New Work" on this website).

In this sub-program the IT executives have to drive the transformation towards an agile culture within their organisation. This has to be embedded in an overarching agile transformation of the whole company. For this reason agile principles usually are taken from the "agile manifesto" (Beck, Beedle, van Bennekum et al. 2001) and have to be accepted and promoted top down in the company starting with the CEO and all Managing Directors. Based on this proclamation the CIO and his executive team can start (or continue) "to work agile" and successively try "to be agile". They have to live the agile values and should perform a noticeably stringent agile leadership approach that is comprehensible to the employees while implementing the IT transformation. The establishment of "Agile Attitude" – esp. in the management team – should be of central importance and that's a real challenge. Regular employee surveys will show whether you are on the right track.

In this first chapter we discussed the change towards an agile culture. The needed capabilities (of the IT organisation) and skills (of the IT people) are addressed in sub-program 5. The IT strategy is determined by the goals and the setting of the ITP and its sub-programs, in which you subsequently have to bring it all together.

Digital Portfolio Delivery / Portfolio Transformation Program (2)

The company's specific digital transformation IT projects are summarised in the Digital Project Portfolio (short: "Digital Portfolio"). For example there can be (new business model-driven) projects regarding digital customer experience within a new omni-channel CRM/CEM system, new digital products and platforms, digital production and supply chain according Industry 4.0 (using an IoT platform), a new data lake on a Hadoop cluster (for advanced data analytics in a Big Data environment), an ecosystem integration or process enhancements using artificial intelligence. Frequently smart automation initiatives with technologies such as Robotic Process Automation (RPA) can also be included. The IT-driven transformation projects (out of the ITP – what is the subject here) are also part of the Digital Portfolio.

The Digital Portfolio is part of the company's overall IT project portfolio. Here you will find additional ongoing projects driven by the current business model but also regulatory and operationally urgent projects (from a technical or functional point of view). While ITP is running, i.e. while IT organisation is changing itself, it has to drive the overall IT project portfolio. This is a big challenge for the entire IT organisation.

A challenge for portfolio management is, that it must change the overall portfolio in view of the scarce resources in such a way, that maximum value is generated for the company, and at the same time the goals of digitisation are achieved as quickly as possible. If the renewal of IT portfolio management is accompanied by the broad introduction of a scalable, agile process model such as



SAFe (see sub-program 4: governance), this is a challenge for all parties involved too. SAFe works on portfolio, program and project level simultaneity.

Project portfolio management, project manager staffing and individual project control are part of the responsibility of this sub-program. In addition, a new and agile model of collaboration with the business departments must be put in place (coming from sub-program 4). These tasks play a key role for reaching the targets within digital transformation.

New issues regarding the portfolio governance have to be placed in the overall IT governance (see also sub-program 4). Both, the business and the IT driven projects in the portfolio, are influenced and need support from the IT architecture team in many ways (see sub-program 3, next chapter).

Digital IT Architecture / Architecture Transformation Program (3)

This subprogram includes, for example, projects on the development and control of the target application landscape, new technology stacks ("tech stacks") to build business applications (e.g. a cloud- and web services-based system architecture), cloud security & governance, cyber security, collaboration tools, enterprise data management as well as service and integration frameworks. At the same time, a pragmatic architecture organisation has to be established, which is based on TOGAF and which, in the sense of an Enterprise Architecture, keeps the focus on the business impact of technology.

Notation: To describe the target application landscape and to drive operational architecture management shifting the existing application landscape in target direction, you need an integrated business model of the company. So, Enterprise Modelling is key to perform Enterprise Architecture Management (EAM).

While digitisation is underway (and the Digital IT Portfolio is being implemented), pooling, development, and control of the solution architects' project assignments is very important. A central approach ensures that systems and project teams can be adapted to the new digital architecture. In this phase, significantly more solution architects are required than later in the operation phase of the digital target system landscape. So, in the target IT organisation they will change their role and e.g. becoming accountable for a cluster of systems or a sub-portfolio of projects.

New issues to the architecture governance (like rules of procedure of the architectural bodies etc.) have to be placed in the overall IT governance (see sub-program 4).

Please note, that architecture management – on the same level like ITSM (see sub-program 7) – is key for reaching the targets of digital transformation (Niemi and Pekkola 2020).

IT Governance, Processes & Operating Model / Governance Transformation Program (4)

As part of the strategic realignment of the IT organisation, a Target Operating Model (TOM) must be developed. For this reason, it must be decided very early on whether (initially) a separate "Digital IT" will be set up to accelerate the transformation (see "Bimodal IT" approach according to McKinsey and Gartner, e.g. discussed in Haffke, Kalgovas and Benlian 2017), or the new digital capabilities are built up within the existing IT organisation.

Another core item of TOM is a new model of collaboration with the business. Especially in times of digitalisation IT projects are essential part of the business strategy. So, the business departments should take responsibility and accountability for their IT projects, while the IT "supports them in implementing the projects". Thereby the new kind of collaboration should also be based on the agile principles, which were decided by the company management as future working basis (see sub-



program 1 above about culture). Product Owner located in the business departments will take the responsibility and accountability mentioned above.

An essential component of IT governance is successful Business-IT Alignment, which is also relevant in chapter 5, where we discuss IT structure. The implementation of IT governance is supported by powerful and internationally accepted standards and procedures such as COBIT.

Building on this foundation, agile project management methods and agile software development processes can be established company-wide to enable a rapid market launch of products and processes, as well as fast adaptation to customer preferences (e.g. like "Scrum" with iterative development in "Sprints"). In this context the introduction of scalable process models (e.g. LeSS, SAFe, Spotify or Nexus) and the transfer of classic operating and development models into agile structures like BisDevOps are necessary. To integrate iterative but plan-driven development processes the usage of "Essence Model" (from OMG/Ivar Jacobson) as an overarching framework can be reasonable esp. in large IT organisations.

Further process areas of high relevance, which usually have to be addressed in the context of an ITP, are test and release management. Esp. Continuous Delivery, the frequent shipping of code to a test or production environment via manual release, and Continuous Deployment, the automated release of code to a production environment, are key to an agile software development process. The establishment of a powerful unit for IT security, especially for cyber security risks, is also of high priority. The transformation management has to decide, where these processes improvements should be located in the program.

Governance regulations and processes from all relevant IT areas, such as portfolio and projects, architecture, data, releases and also IT controlling and purchasing should be successively recorded in one single IT Governance Framework and regularly communicated throughout the company.

Human Capital & Agile Working Structure / Human Capital Transformation Program (5)

This Sub-program concerns Human Capital Management (HCM) and the appropriate IT working and reporting structure for both, the transformation situation and the organisational target scenario.

The HCM part contains the conception and introduction of new skill, role and competency models as well as planning of tactical and strategic IT personnel requirements. A global used model for describing and managing skills and competencies for professionals working in Information and Communication Technologies (ICT), software engineering and digital transformation is the "SFIA Framework". As a common reference model, it is independent of technology, method or approach, and it's a real enabler for managing resources. The precarious demographic situation in many IT organisations and also the lack of IT specialists on the market plays an important role in personnel planning.

The ITP leads to many changes that affect culture, processes, technologies, methodologies and the nature of cooperation and collaboration. This "New Way of Working" is a very big change for all involved. Additionally, a new cut and design of IT services lead to a corresponding change of IT roles (see the services and sourcing sub-programs in chapters 7 and 8). For example, in the case of application outsourcing new IT roles like "Technical Lead" and "Requirements Lead" are needed in the retained organisation to control the outsourcing partner.

The fundamental IT structure (in transformation phase and in target mode) is usually based on the established Demand and Supply Model (D&S) and/or the well-known Plan/Build/Run scenario (PBR). At the next level of detail, today's digitisation initiatives build organisational units across functions



and/or products. This often leads to new structural concepts like Tripes, Squads and Chapters instead of Teams, Departments and Divisions. Agile Coaches within these new structures help with respect to methods and techniques (see more in our paper "Movement towards Agile & New Work" on this website). The fundamental and the IT structure in detail, the latter with regard to cross-functional and product-oriented teams, have to be defined and implemented in this sub-program.

IT Infrastructure Transformation – Infrastructure Transformation Program (6)

IT infrastructure is covering data center, communication networks, technical IT security, and enduser services regarding their workplace environment, e.g. help desk and floor services. This is the technology foundation that supports a company's business strategy, its ability to innovate with technology, and therefore its digital capabilities. The enormous bearing on corporate performance reaches from back-end capabilities over customer-facing advances (e.g. in-store Wi-Fi) to enhancements for internal employees (like access to social collaboration tools – in times of corona virus) and the growing use of flexible and secure cloud services. The IT services underlying these capabilities are nowadays usually outsourced.

In terms of transformation the topics often are data center consolidation, uniform identity & access management, a global usable and standardised web client, secure and manageable multi-cloud environment (systems management strategy) and bring-your-own-device initiative. Often, a revision of the technical release management is also necessary to achieve the goals regarding Continuous Delivery and Deployment mentioned above in the context of agile software development (see chapter 4). Even IT service management, which up to now was mainly located in the infrastructure area, usually has to be extended within an ITP (see chapter 7).

Due to the complexity and high costs of changing suppliers, IT infrastructure modernisation requires planning and experience to minimise disruptions, reduce costs and effort, and accelerate deployment time.

Business and IT Service Management – Services Transformation Program (7)

Business Service Management (BSM) represents the link between Business Process Management (BPM) and IT Service Management (ITSM). Its goal is to achieve better alignment between business and IT. It shows the dependency of business on IT and e.g. the impact of IT disruptions on business. This is done by linking business processes with underlying IT services. In this context a distinction is often made between business services, application services and infrastructure services.

Notation: Dependencies of business on IT have to be managed in several overarching and often regulatory areas like Internal Control System (ICS), Business Continuity Management (BCM) or process-based IT Security Management System (ITMS). So, companies should think about using and maintaining only one single process model for all this stuff.

To support a BSM, an established ITSM is necessary, whereby the IT Infrastructure Library (ITIL) represents a de facto standard for this. The necessary architectural considerations are made in the context of the implementation of a service-oriented architecture (SOA) in sub-program 3. On this basis the IT teams can flexibly implement the dynamic requirements of the business.

ITSM is - e.g. like EAM - a central instrument for the CIO to manage IT as a business. IT services have to be clearly defined, quality inspected, quantified and analysed with regard to KPIs coordinated with the service recipients. The "Service Desk" is the central contact point for a structured and customeroriented handling of all user requests. On the level of "business units as service recipients and service providers" the desk operates for example between



- business units and application & infrastructure operations,
- application operations and infrastructure operations and
- application & infrastructure operations and external service providers (e.g. outsourcing partners).

The goal of an IT transformation should be the development of a complete ITSM for both, a control instrument for senior IT management and a basis for future BSM. That is the content of the here described sub-program 7. A comprehensive ITSM at the same time with a pragmatic approach is a challenge but also the prerequisite for sustainable outsourcing of IT services.

Sourcing & Shoring Strategy – Sourcing Transformation Program (8)

In many companies, for example, network operations, server operations or floor service are already outsourced to external partners. The corresponding infrastructure IT services have been defined and the performance of the partner is regularly reviewed using KPIs based on defined Service Level Agreements (SLAs). The external partners were also fully integrated into the systems management processes.

In order to make IT more agile and responsive and to strengthen it with complementary skills of external partners, an advanced strategy regarding sourcing and shoring is often developed and implemented in the context of IT transformations. In addition to the desired economies of scale and the inflow of know-how from external talents, factor costs are also a major driver of this initiative (e.g. the daily rate of a software developer).

Often a selective sourcing and shoring strategy is pursued, such as outsourcing of commodities, setting up own nearshore and offshore centers, offshore sourcing with strategic partners in projects or even transferring responsibility and accountability to these partners for the operation and further development of IT applications (global application outsourcing). The decision for one of these measures is usually based on clearly defined criteria.

Necessary conditions for example are:

- The internal optimisation of the IT service is reaching its limits.
- Sufficient competence and resources are available in the retained organisation.
- There is a liquid market that allows benchmarking and change of provider.
- There is transparency regarding the economic levers of the provider (his business model).
- All supervisory regulations are guaranteed and complied with by providers.
- The company can actually reduce the remanence costs.

Global application outsourcing is a much more complex enterprise than nearshoring of infrastructure services. Please note, that careful analysis should precede redesign of the complex performance relationships of the application landscape and its impact on the business units concerned. It is very demanding to distinguish between the different artefacts like applications, applications platforms, systems, system stages, SAP system lines or SAP modules and to define the future cut of IT application services.

Program Management Office - PMO Staff Function (9)

The Program Management Office (PMO) is providing project management support functions to the Program Management and to the Sub-Programs. Its usual tasks are well known. To present a few examples the PMO



- provides processes for project reporting and tracking as well as resource allocation and capacity management,
- ensures compliance with program policies and processes,
- offers support mechanisms for cross-functional teams and
- facilitates project management mentoring.

In total it provides a fundamentally sound methodology to manage the program. Beyond that the program management involves the PMO in operational controlling and direct management.

Central Program Communication – CPC Staff Function (10)

In view of the enormous amount of change in the IT organisation and regarding each individual employee, which we discussed above (in chapter 5: sub-program HCM), the team Central Program Communication (CPC) is the most important lever to lead the IT transformation to success. In order to manage the change, it is important to gather critical voices, to know the employees' fears and to find answers to the most pressing questions.

To promote the New Way of Working the CPC has to develop and execute a comprehensive communication plan that contains many different formats and channels. E.g. in the intranet channel there should be a "Transformation Wiki" and topic-specific publications, forums and chats. Also podcasts and life streaming of local presentations and discussions can be offered (e.g. "Digital Morning Talks").

Leadership communication can also consist of interactive digital formats like blogs as well as small personal conversation-formats like short visits in team and management meetings/stand ups and departmental conferences. Because of corona virus the classical big communication formats like Town Hall Meetings in different locations of the company or All Hands Meetings etc. are not appropriate at the moment. But, of course, large telephone and video conferences can be performed. In all these formats it's important to listen and respond on a personal level as well as on an equal footing.

In consultation with the PMO, it may be useful that continuing education and training related to the IT transformation are coordinated by the CPC with a view to the communication plan.

Already in the culture sub-program (chapter 1) we mentioned regular employee surveys. These structured surveys should also be designed and processed by the CPC. It's very important to get this anonymous feedback, to follow the evolution of the mood in the workforce and to communicate the results of the surveys regularly.

Transformational IT Working & Reporting Structure

Initial situation and objectives

For many companies, the existing IT structure reflects priorities of an earlier era. The structure was a product of deliberate, well thought out design, or it was something the organisation has drifted into in the course of time. In the last years some IT organisations – esp. in the financial industry – change their organisational vision from "Keep the light on" to "Keep some lights on". The focus was on cost reduction and there was little impetus towards innovation. This perhaps, is the starting point of the new IT structure.

After discussing a generic structure of the ITP we now present a matching Working & Reporting Structure for the entire IT organisation. To achieve the goals of digital transformation the company needs a Digital Delivery with high speed and fast scalability. In sup-program 5 (about HCM &



struture) for this purpose we mentioned the Demand and Supply Model (D&S) and the Plan/Build/Run scenario (PBR) to create the fundamental IT structure. In our opinion this is a good basis for both situations, the transformation phase and the target mode.

Fundamental IT reporting structure for transformation phase and target mode

Enclosed you find a generic reporting structure with 8 IT units which corresponds to the structure of the ITP (presented above). In the following overview, the individual units are coloured to show the connection to the D&S model:



The D&S model separates customer-facing tasks such as requirements management and IT strategic planning of the IT investment portfolio from production-focused tasks such as application and infrastructure development, maintenance and operations. The rationale behind migrating to the D&S model is often to address the pressing need to be more responsive to business requirements and to achieve a closer connect between demand and fulfillment. In addition, organisations may consider a dedicated demand team in situations where communication between business and IT must be improved, due to legacy reduction reasons and/or in a heavily outsourced environment. Note, that the architecture & planning unit (5) and the IT services & sourcing unit (6) – in our view – are not necessarily part of the demand or supply side.

The D&S model creates a clear line of sight between business requirement and resource allocation. On the other hand, it separates requirements definition and development, what is particularly challenging for iterative development.

The overview on next side shows the same IT units, but now coloured with respect of the PBR scenario. In this scenario, meanwhile, IT is segmented into three units. The 'planning' part of PBR comprises IT strategic planning, enterprise architecture, demand management and financial management. The 'build' unit covers all projects, including application and infrastructure development and handles program management as well. Application maintenance and operations, ongoing data center management, and service desk operations fall under the 'run' unit.

The PBR model segments IT by nature of work stream, and the model represents the need to manage development and maintenance independently, guided by different objectives. It enables different and independent management of sourcing across development and maintenance. So, capacity can be handled separately, but the PBR approach duplicates technical talent across 'build' and 'run' (Note:



e.g. in banking IT they are often called "Change the Bank" and "Run the Bank"). Furthermore, PBR creates the risk of losing accountability across the Software Development Lifecycle (SDLC) phases (Roy 2019).



In our thinking it's a good idea to create an IT structure with respect of both models, with the aim of balancing out mutual strengths and weaknesses. The 8 units shown in the overviews are working in both models (D&S and PBR) and basically are applicable in the IT transformation phase and in the target IT organisation as well (at least as a starting point for the conception).

The 8 IT units for transformation phase and target mode

In this chapter there will be given no detailed explanation of the individual units. Only a few keywords and content-related notes are given, which explain the context in more detail.

IT Demand Management (1)

- requirements management and IT investment planning (wish lists of business departments)
- structured according to IT business alignment

IT Project Portfolio Management & Delivery (2)

- reaching agreement to IT investments, project portfolio management and governance
- structured like IT Demand according to IT business alignment

Application Development, Maintenance & Operations (3)

- incl. project budgets and excl. solution architects
- structured like IT Demand and Delivery according to IT business alignment

Infrastructure Development, Maintenance & Operations (4)

- incl. infrastructure budgets and excl. system architects
- structured according to the main infrastructure service categories
- technical Service Desk operations, incl. Order Desk (for HW/SW orders)

IT Architecture, Security & Planning (5)

- Enterprise Architecture (incl. matching with/driving transformation program and project portfolio regarding target architecture; pooling & steering of solution & system architects to this reason; architecture governance)
- IT Security & Data Protection (e.g. build up cyber security team)



• IT Planning & Controlling (incl. IT budget allocation, medium and long-term financial planning, IT cost allocation to the business, and IT cost governance)

IT Services & Sourcing Management (ITSM) (6)

- ITSM Process Steering
 - o **IT product & services library** (incl. shadow IT, e.g. small SaaS or end-user solutions within business departments, and functional ITSM tool/Service Desk management)
 - Functional Service Desk Management (establishing roles & maintaining role assignment, driving the process regarding change requests, incidents, and problems)
- Major Incident Process (establishing roles & maintaining role assignment, driving the process, incl. customer and management communication)
- (Strategic) Sourcing & Procurement Management (incl. sourcing contracts, SLAs and KPIs, purchasing contracts & license management, functional Order Desk management, and IT procurement governance)

IT Human Capital, Processes & Compliance (7)

- IT Human Capital Management (incl. HR planning & controlling, innovation process, competence & career model, and learning & development)
- IT Processes, Audit & Compliance Issues (incl. internal controls system, BCM etc.)
- IT Risk Management & Regulatory Issues (IT Issues only, e.g. BAIT/VAIT in the German financial services industry)

IT Strategy & Communication (8)

- IT Strategy (incl. matching with/driving IT transformation program & project portfolio regarding IT strategy; overarching maintenance of IT governance)
- Internal & external IT Communication

Outlook

At the next level of detail, the teams, departments and divisions are then be defined (or starting top down). In today's digitisation initiatives new and agile structural concepts like Tripes, Squads and Chapters are more and more used at this point. Organisational units are built across functions and/or oriented on products. Agile Coaches within these new structures help with respect to methods and techniques (see more in our paper "Movement towards Agile & New Work" on this website). To design and work in this kind of structures, IT management should have to lay on the concept of ambidexterity (see Nieto-Rodriguez 2014).

While careful analysis should always precede redesign of any complex organisational system, these new structures certainly warrant at least a thorough assessment of the frameworks and their relevance to the company.



Abbreviations:

BisDevOps - Business, Development & Operations (agile operating model)

BAIT/VAIT - Banking/Insurance supervisory requirements for IT (German regulation)

BCM - Business Continuity Management
BPM - Business Process Management
BSM - Business Service Management

COBIT - Control Objectives for Information and related Technology (Framework)

CPC - Central Program Communication (Staff Function)

D&S - Demand & Supply (organisational approach)

EAM - Enterprise Architecture Management

HCM - Human Capital Management

ICT - Information and Communication Technologies

IoT - Internet of Things

ITIL - Information Technology Infrastructure Library (Framework)

ITSM - IT Service Management

KPI - Key Performance Indicator

LeSS - Large Scale Scrum (Framework)

OMG - Object Management Group

PBR - Plan/Build/Run (organisational approach)
PMO - Program Management Office (Staff Function)

RPA - Robotic Process Automation

SAFe - Scaled Agile Framework (Framework)
SDLC - Software Development Lifecycle

SFIA - Skills Framework for the Information Age (a Framework)

SLA - Service Level Agreement

TOGAF - The Open Group Architecture Framework (Framework)

TOM - Target Operation Model

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