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Are large-scale transformation initiatives doomed by default?

Transformation Assurance

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Change is omnipresent these days, and for private businesses and public organisations alike survival in a highly dynamic and competitive environment hinges on transforming successfully. Despite these demands and the actions taken, there is overwhelming evidence that most transformation initiatives actually tend to fail. Statistics show that 75 %[1] do not meet their intended objectives, be it in terms of the benefits achieved, timing, or both. That said, the extent of this failure is hotly debated among academic researchers and practitioners. What are the reasons behind this alarming number, and how can this situation be remedied?

In this article we highlight the importance of identifying symptoms and major root causes that can lead large-scale transformations to struggle. We also seek to redress the prejudice against technology as being a main driver of project failure and will be providing insights into how the failure of a transformation initiative can be prevented.

[1] Ward, J., De Hertogh, S. and Viaene, S. (2007). Managing Benefits from IS/IT Investments: An Empirical Investigation into Current Practice, In Proceedings of the 40th Hawaii International Conference on System Sciences – 2007

Megatrends forcing companies to transform

The current business environment is characterised by a heightened need for change and an ever-increasing volume of corresponding programmes and projects. Macroeconomic megatrends are among the factors driving the transformation of corporations and even complete industries. These trends are set to prevail into the foreseeable future, bringing with them greater competition and challenges.

Figure 1: Megatrends
(Source: authors' illustration)

Demographic and social change

Shift in global economic power

Rapid urbanisation

Climate change and resource scarcity

Technological breakthroughs

The need for transformation will in turn bring unprecedented uncertainty and pressure to remain competitive in a constantly changing environment. Furthermore, megatrends have raised the stakes for transformation success and increased complexity in such initiatives:

- Technological breakthroughs can create entirely new business models and/or destroy old ones.
- Investments in transformations account for significant portions of company budgets and are increasingly becoming large-scale undertakings lasting several years.
- Transformation programmes often span business units or even organisations.
- Transformation programmes are key to achieving agility and benefits and/or satisfying changing regulatory requirements.
- Internal and external stakeholders, including executive boards and audit committees, are demanding greater visibility of transformation programmes and project activities.
- Transformation programmes often comprise international teams and are influenced by both cultural issues and compliance with local laws and regulations.
- There is significant competition for experienced and skilled resources for transformation programmes and projects.

It is therefore more important than ever to be successful in the selection, performance and delivery of transformation programmes and projects, and in realising related business benefits. The failure of a strategic initiative can threaten the very existence of a corporation if there is insufficient time and/or capital left for a second attempt to maintain the company's unique selling proposition (USP) or market position.

However, the literature shows that there is at least one prominent example of a failed transformation initiative for each of the five megatrends, as shown below:

	Transformation programme	Reason for failure (1)	Reason for failure (2)	Reason for failure (3)
	**BER: International Airport Berlin-Brandenburg**[2]	Incomprehensive programme management	Lack of quality management	Conceptual design flaws
	**UK National Health Service: national rollout of a Care Records Service**[3]	Underestimation of costs	Insufficient user training	Resistance to cultural change
	**Volkswagen: vehicle emissions system**[4]	Design non-compliant with requirements	Deliberate risk decision	Poor communications
	**US Airforce: Expeditionary Combat Support System (ECSS)**[5]	Lack of governance structure and no effective change management	Incapacity to manage complexity and lack of adequately implemented controls	Insufficient time to review the technical documentation
	**Los Angeles Unified School District's Instructional Technology Initiative**[6]	Missing/incomplete requirements	Failure to gain stakeholder support	Quality related issues

[2] http://www.newstatesman.com/business/2013/09/curious-case-berlins-brandenburg-airport
[3] https://www.theguardian.com/society/2013/sep/18/nhs-records-system-10bn
[4] http://business.financialpost.com/news/transportation/putting-a-price-on-volkswagens-emission-fraud-mess-its-going-to-cost-them-billions
[5] http://www.computerworld.com/article/2493041/it-careers/air-force-scraps-massive-erp-project-after-racking-up--1b-in-costs.html
[6] http://www.wired.com/2015/05/los-angeles-edtech/

Symptoms and root causes leading to transformation failures

Given that megatrends will force organisations to transform and invest substantial amounts in programmes and projects, it is important to ask why transformations fail so often and to ascertain the symptoms and root causes behind these failures. There is a broad array of possible reasons, and the following symptoms normally contribute to poor project performance.

Figure 2: Reasons for transformation failure
(Source: Insights and Trends: Current Portfolio, Programme, and Project Management Practices – The third global survey on the current state of project management; PwC 2013.)

Symptoms of transformation failure are often visible to project managers and stakeholders and could easily be identified at any stage of a transformation project. However, it is frequently the case that a single symptom or risk will often not endanger the success of the transformation, whereas a range of symptoms and risks – coupled with a lack of understanding of the dependencies and underlying root cause – will certainly hamper success and jeopardise the investment.

Taking the symptoms of poor project performance listed above, if we investigate more deeply to determine the key root causes and mechanisms of negative impacts on successful realisation, we gain fresh insights into the key root causes of transformation failure. Although some are widely discussed and disseminated in scientific project management literature, they are rarely known or sufficiently addressed in practice.

To reduce the manifold number of symptoms and risks down to the essential root causes of transformation failure, we have identified the five main determining forces in this respect that are most often overlooked or neglected by project managers and sponsors:

A. **Lack of methods**
B. **Unknown processes, products and technology**
C. **Complexity**
D. **Uncertainty**
E. **Human behaviour and leadership**

"We become what we behold. We shape our tools and then our tools shape us."

Marshall McLuhan

A. Lack of methods

Despite the advantages of using a programme or project management methodology (PMM) such as the PMBOK® Guide or PRINCE2, scientific research shows that only 50 % of organisations get their staff to use these appropriately. In the context of software development projects, only 6 % of organisations claim that their methodologies are always used as specified.

Given these frequent shortcomings in how they are deployed, the practical usefulness of PMMs remains controversial. This is a critical aspect, since purchasing a PMM alone will not ensure sustained productivity gains for an organisation. Introducing such programmes calls for upfront investments, and they have to be properly managed to ensure consistent, committed usage. Without this, the expected productivity gains and increased rates of project success will fail to materialise.

Another important factor in the methodology area is the tendency toward denial, be it with regard to the existence of symptoms and risks or uncertainty among project managers and sponsors as to the right set of methods to identify them. They therefore either avoid them, ignore them, or delay their actions until the circumstances have improved.

As a result, project managers often do not follow a standard approach or method to identify the symptoms and risk. There is frequently a lack of a clear sequence of identification, analysis, responses, and monitoring in this regard, which could lead to project failure. Although risk identification is often part of the standard project management process, in many cases it features only at the start of the undertaking. Meanwhile ongoing project risk analysis remains something of a rarity. Project managers often do not regard risk analysis as being potentially valuable. This being especially true with regard to quantitative risk analysis techniques, which are often discarded as being too much effort and too expensive. An example of such a lack of effective risk management is J.P. Morgan Chase's New Synthetic Credit VaR (Value at Risk) Model, which ended in utter failure.[7]

"Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important."

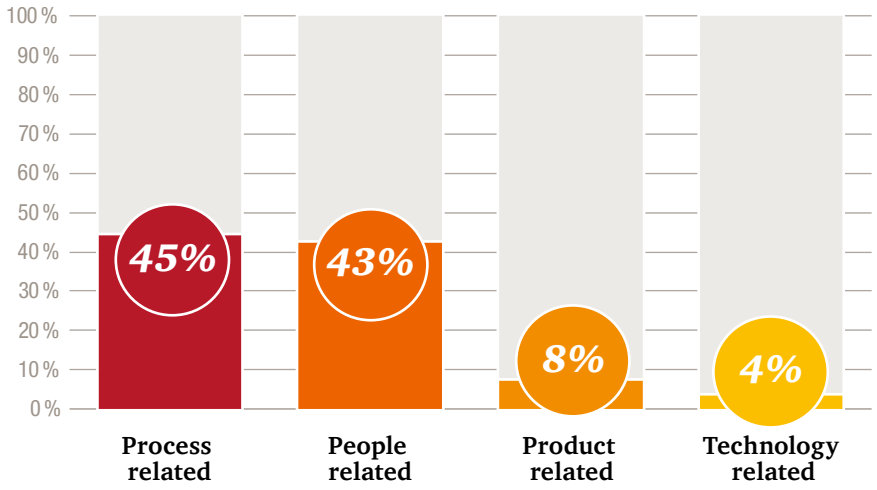
Bill Gates

B. Unknown processes, products and technology

Many people believe that project success hinges solely on the 'proper' product and (IT) technology for identifying and managing symptoms and risk. Unfortunately, anyone putting credence in this is in for a disappointment.

To dispel this myth, and to get an unbiased view, we examined the scientific research into the hypotheses that (IT) technology is a key factor in project success or failure. According to Nelson's study of issues in 99 IT technology-related projects, technology is rarely the main reason for project failure. The study showed that 45 % of project mistakes or failures are process-related (e.g. insufficient project risk management) and 43 % related to people (e.g. project leadership and management). Surprisingly, only 8 % were product-related (e.g. feature creep, gold-plating) and only 4 % related to (IT) technology (e.g. immature technology). In summary, projects do not fail due to insufficient or unknown products and technology. Instead, they fail due to a lack of the right processes to identify symptoms and risk of project failure, and due to people lacking project leadership and management skills.

Figure 3: Issues in 99 IT projects
(Source: Nelson, R.R. 2007. IT Project Management: Infamous Failures, Classic Mistakes, and Best Practices. MIS Quarterly Executive, Vol. 6, No.2, June 2007, 67, 2007)



[7] Harvard Business Review (2012): JP Morgan's Loss: Bigger than "Risk Management"; by Robert Kaplan and Anette Mikes; May 23, 2012

"Fools ignore it. Pragmatists suffer it. Some can avoid it. Geniuses remove it."

Alan Perlis

C. Complexity

A major challenge in novel programmes and projects is solving complex emergent problems without having proven methods. This means project leaders and participants have to try to develop an understanding of the situation and of the methods needed to reach a moving target. The complexity of emergent issues can increase the demand for information and communication management, and can also hinder processes.

To find the right methods, understanding what project complexity entails is of the utmost importance. Although the word 'complexity' is omnipresent in project management – and often used as an excuse for not reaching the defined project outcomes – there is no unequivocal definition of what it means. One reason for this is that in the context of project management, there is no single concept of complexity that can adequately capture an intuitive notion of the word. We therefore have to deduce it from scientific research, where there are two main approaches. On the one hand, there is the descriptive view of Baccarini, who sees project complexity as a concept of technological and organisational complexity. On the other hand, there are those scientists who see it more as being perceived, considering it to be subjective, with the complexity of a system being improperly understood through the perception of an observer.[8] We would not concentrate on one of these views to the exclusion of the other. We see project complexity being influenced by both, with technology and organisation forming the system in which the project operates, and the actors within that system (people, processes, products, and technology) perceiving its complexity on the basis of specific factors and characteristics such as:

- **size of the project** (e.g. scale of capital investments; number of activities, processes, project workers, stakeholders, systems and interfaces, etc.)
- **variety of the project system** (e.g. interests of stakeholders and multiplicity of technology, product, and service combinations)
- **interdependencies within the project system** (e.g. dependencies and influences of project schedules, scope items, internal and external resources, etc.)
- **elements of context** (e.g. changes in competition, laws and regulations, institutional configuration)

To understand the consequences of project complexity for each individual project, and to find the right set of methods and tools to manage it, it is essential to assess the attendant factors and characteristics in the areas of organisation and technology on an ongoing basis. If such assessments are not performed, the impact on transformation success is often underestimated, or not even realised until too late. A good example of this is the Berlin-Brandenburg Airport ('BER') project, where the complexity of the project was underestimated from the start, and ineffective tools and methods were chosen to identify and manage project complexity. The result was a high degree of 'uncertainty' regarding the overall project success. This project has been ongoing for more than ten years now, and there is still no fixed date for the airport opening. A total of 66,500 defects have been identified, with 34,000 rated as 'significant' and 5,845 as 'critical'.[9]

"There is no such uncertainty as a sure thing."

Robert Burns

D. Uncertainty

If complexity is high, there is always greater uncertainty about the assumptions and estimations regarding project cost, time, scope, and quality as seen in the BER project. Uncertainty is therefore the inevitable negative consequence of project complexity, and can apply to different project areas such as

- the duration of a task,
- the cost of a deliverable, or
- any dimension of any object in the project system.

Furthermore, a complex transformation programme or project includes interdependencies and interconnectivities between its elements (tasks, resources, benefits, etc.). As a consequence, the corresponding uncertainty regarding a parameter can spread through the entire system. Any element connected in some way with this parameter is itself faced with uncertainty, and similarly passes this on to all its neighbours. This was clearly illustrated with the various components of the BER airport, for example. Firstly, the entire cabling of the airport was found to be in violation of regulations,

[8] See for descriptive view Baccarini, D. (1996), The concept of project complexity – a review, International Journal o Project Management, Vol. 14, No 4, pp. 201-204 and the perceived view of Schlindwein, S. and Ison, R. (2004). Human knowing and perceived complexity: implications for systems practice. Emergence: Complexity and Organization, 6(3) pp. 27–32

[9] http://www.newstatesman.com/business/2013/09/curious-case-berlins-brandenburg-airport

and all the connections therefore had to be redone. The fire prevention set-up was then found to be lacking, and one part of the project tried to compensate for this by installing a bigger smoke extraction system under the ceiling. It was subsequently determined that this exceeded the ceiling weight limits, and it had to be torn down again.[10] Hence understanding the factors and characteristics of complexity in every single project is of the utmost importance when it comes to balancing and managing uncertainty over time.

There are frequently cases where the factors and characteristics of project complexity cannot be identified, and where those involved remain totally unaware of the uncertainty. This usually has sudden and severe consequences. A typical example documented in the literature is 'unknown unknowns' – also referred to as unk-unks – which often appear in innovation and technology break-through projects where the defined project outcome is not fully known at the beginning. Unfortunately, this type of uncertainty cannot be predicted based on intuition or without a perfect model. Although these cannot be fully covered by project risk management techniques, approaches to determine unk-unks in a project exist nonetheless: selectionism (parallel trials) and trial and error (sequential trials). Examples can be seen in the case of NASA space programmes, such as the ongoing Mars exploration programme. This started with sending a small orbiter to the planet in 2001 (Odyssey), then a full Mars Science Laboratory in 2012 (Curiosity), and finally the first humans should be sent in 2030.[11] If project complexity is accordingly high, with unpredictable factors and characteristics resulting in high uncertainty, the project goals and deliverables should be put in a phased system with a clear prototyping approach.

"… flows from three main sources: desire, emotion and knowledge."

Plato

E. Human behaviour

How projects are perceived and the way in which leaders and participants deal with emergent problems is heavily influenced by emotions, knowledge, the language used and the narratives developed by leaders. This depends on how leaders frame the project and the role of others. It is especially important in projects where their objectives and the methods for attaining these are unclear. In such cases, the project manager and team will be confronted by an ongoing stream of emergent issues that have to be dealt with. Furthermore, in unclear situations, the narrative proposed by the project manager is likely to be more fluid and negotiable than in instances where the project goals and methods are clear.

Consequently, the majority of typical root causes for project failure are related to human interaction. Project managers actively influence the probability of success, especially amid increasing levels of complexity and uncertainty, even if they do so unawares or unintentionally.

As a result, while the importance of good communication and emotional intelligence for project success is often emphasised, the view of language and emotions as constructing project events – rather than merely representing them – is frequently ignored.

If unrecognised, competing narratives that are likely to arise in the event of complex emergent problems in novel projects can have a detrimental impact. Groups framed as an important focal point by the project and programme managers usually include the project, the programme, the employing organisation and the client. If the interests of different groups conflict, project and programme managers often explicitly frame one group as being more important than the others in resolving complex problems.

Summarising these five influencing forces, it appears clear that they do not exist or occur in isolation. Instead, it is a question of whether they occur in parallel and reinforce their dynamics to place a project in great difficulties or send it back to the drawing board. In the next chapter, we will therefore highlight how to identify and manage the dynamics of these five forces.

[10] Drucksache 17/3000 14.06.2016 Bericht des 1. Untersuchungsausschusses des Abgeordnetenhauses von Berlin – 17. Wahlperiode – zur Aufklärung der Ursachen, Konsequenzen und Verantwortung für die Kosten- und Terminüberschreitungen des im Bau befindlichen Flughafens Berlin Brandenburg Willy Brandt (BER)

[11] See https://www.nasa.gov/topics/journeytomars/index.html

How to make your transformation initiative more successful

One initial step that can be taken to increase effectiveness in identifying and managing symptoms and risk of transformation failure is to follow a clear checklist approach, akin to those used by airline pilots. This can ensure that the five forces – methods, processes, products, and technology, complexity, uncertainty, and human behaviour – are sufficiently understood, included and effectively covered by project managers and sponsors before and during the transformation project.

	Yes	No
1. Appropriate use of methods		
• Have the right project management methods been selected to identify symptoms and risks for transformation failure?	☐	☐
• Are programme/project managers and sponsors committed to using the project management methods properly before and during the transformation?	☐	☐
• Have all hindrances to using the project management methods been properly removed by top management?	☐	☐
• Have the project management methods been properly mastered and adapted in line with the complexity of the transformation?	☐	☐
2. Knowing your processes, products and technologies		
• Has a clear vision been established for the transformation undertaking and have the outcomes been defined in a clear business case and benefits analysis?	☐	☐
• Has a clear target operating model been defined at a high level with regard to processes, products and technology, and has it been adapted in line with the vision for the transformation?	☐	☐
• Have the right vendors and technologies been evaluated and selected to support this vision?	☐	☐
• Have the high-level design requirements been defined and the minimum viable product aligned with key stakeholders?	☐	☐
3. Manage the level of complexity		
• Is the degree of complexity over the project life cycle clear and understood?	☐	☐
• Have the organisational and technological complexity been assessed according to the size, variety and interdependencies of the transformation as well as the contextual elements?	☐	☐
• Have processes and controls been sufficiently defined and formalised, and have they been implemented for the complexity level at hand?	☐	☐
• Have the interdependencies been clearly mapped out and tracked regularly for cause and effect?	☐	☐
4. Manage the level of uncertainty		
• Have the negative consequences of complexity been assessed and the level of uncertainty defined in accordance with the duration of tasks, the cost of deliverables, and any further important dimensions of the transformation that have been identified?	☐	☐
• Have alternatives been formulated and pre-planned as contingencies?	☐	☐
• Have strategies for unk-unks and high uncertainty been defined, e.g. parallel or sequential trials?	☐	☐
• Have sufficient buffers been put in place to deal with unk-unks, both in the budget and in the schedule?	☐	☐

	Yes	No
5. Use competent people		
• Has a strong and experienced programme/project leadership been selected to drive the transformation, with a clear focus on emotional intelligence?	☐	☐
• Does the programme/project have the right skill mix and number of people over the whole transformation life cycle?	☐	☐
• Has a clear communication strategy been established from the beginning of the transformation to avoid any competing narratives with regard to the vision and goal of the transformation undertaking?	☐	☐
• Is the motivation of the project members maintained at a sufficiently high level?	☐	☐
• Are all members aware of the objectives and their own roles?	☐	☐

Like an airline pilot, it is the programme/project manager of a transformation who is ultimately responsible for going through such a list to check the stability and safety of the flight before, during and after the 'take-off' and again like the pilot, if the answer to any of the questions in the checklist is 'no' or 'perhaps yes', it is the manager's responsibility to analyse the reason and fix or mitigate the issue immediately to ensure a safe and pleasant flight. Of course, it may be necessary to postpone or delay the start of a transformation, if one or more of the five forces are not fully understood or manageable. And in some cases the start of an undertaking may have to be aborted, even if it is in the ramp-up phase, returning to the airport terminal, as it were, to fix the issue or change the aircraft if the issue cannot be resolved with current methods, tools, processes, technologies and people. Once an aircraft is in the air, there can even be instances where a landing has to be aborted if the landing strip is not ready for landing or blocked by another plane, to carry the analogy a little further.

Of course, a checklist alone will not be sufficient to avoid a transformation project failing. However, it is one essential part of an adequate toolset for managing such processes successfully. To stay with the aviation analogy, we can compare this to pilots having been educated and trained very well in the theory and all the underlying practical methods, processes and technology used, and then having to fly a commercial airplane in real life for the first time. During a flight, a pilot has to observe, analyse and control the surroundings at all times to be able to react and adapt to any signs of the environment changing.

Our point of view

Unfortunately, today's business environment is characterised by an increased necessity for change and an ever greater volume of resulting programmes and projects. Transformation initiatives have become larger and more complex, and investment volumes are increasingly continuously. However, success rates have not increased correspondingly; on the contrary, they are even declining.

As large-scale business transformations are typically characterised by heightened levels of complexity and uncertainty, it is becoming much more difficult to manage the risk of failure within such an initiative without having the right skills or resources and experience of similar undertakings. There is no doubt that this requires an even more robust programme management and a sound steering framework to proactively identify and address challenges throughout the project or programme life cycle.

While the proper setup of a transformation initiative builds the basis for success, the foundation laid also needs to allow for some flexibility in order to gainfully adapt the initiative to an ever-changing environment caused by both internal and external factors. In this regard, programme managers and sponsors need to be able to take the right decisions quickly in complex and uncertain situations, most often relying on information provided by project teams and stakeholders.

If large-scale transformations are to be successfully steered throughout a challenging programme phase, we believe the following steps are essential before embarking on the undertaking:

1. Systematically determine symptoms of failure based on the five forces
2. Identify the main root causes, connect the assessed complexity with uncertainty, and identify interdependencies to the other forces
3. Analyse the impact of the root causes and build scenarios based on the five forces
4. Define possible remediation actions to address the root causes based on the established scenarios
5. Implement remediation actions to manage the five forces proactively
6. Measure and control expected outcomes on an ongoing basis

In our experience a layered approach, starting at the project and work-stream level and moving through to programme and project management functions towards an independent external view, is also the most efficient way of achieving maximum transparency, and thus ultimately increasing the chance of transformation success. This also provides comfort to sponsors and governing bodies.

If you require more information about how to manage a large-scale transformation more successfully, please do not hesitate to contact our experts.

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