INNOVATION
VALUE
INSTITUTE

White Paper, December 2013
Dr Stephen McLaughlin

Using the IT-CMF as an Enabler for Transformational Change

Abstract

Change is the order of the day. Organizations, as they focus on survival, realize that the ability to sense and respond to changes in the competitive marketplace is a strategic imperative. The nature and scope of these changes can be difficult to predict, but one thing is assured; to successfully respond to competitive forces organizations continually have to challenge and modify their existing practices, processes, and cultural norms. This white paper examines how managing the impact and disruptive nature of transformational change should be considered across the entire organization, and how engaging with the IT-CMF can help bring an objective view and clarity to defining what needs to be done. Whilst the IT-CMF does not replace the need for an organization-wide understanding of the nature of change, the framework will complement the implementation of change by providing a clear and objective view of what needs to be achieved, and how to achieve it, thereby enabling successful implementation.

KEYWORDS: change, organization, transformational change, IT-CMF, framework, change management, technology, change spectrum, maturity, interventionist approach

Introduction

The intention of this white paper is not to discuss whether or not an organization should change based on the influence of changing competitive factors. Instead, this white paper will start with the assumption that an organization has already come to the conclusion that change is necessary. This conclusion may be based on either a *reactive* or a *proactive* view of the operating environment. The ideal position is *proactive* as this infers that the organization has had time to reflect on the changing environment in which it operates, and then envision what the new paradigm will look like. However, even the best outward looking, environment-sensing organizations can fail to see (and miss) a disruptive factor (be it technological, legislative, political, environmental etc.,) that will impact their business. Nokia, for example, back in the 1980s went through massive transformation from a wood, paper, and steel provider into the number one worldwide mobile phone provider, but then stumbled and let Apple take the advantage by capitalising on the smartphone revolution (Palmberg, 2002). In fact, examples of these failures to sense and respond can be found across all industry sectors.

The point is, effective change management will be required, and not as a *once-off* effect but more and more as part of the way organizations will need to operate. Trying to guess, with a high level of certainty, what will drive the next disruptive event for an organization is difficult (Flyvbjerg et al, 2011). Certainly we can see many disruptive innovative technologies emerging – such as Cloud and Big Data – but many organizations, not necessarily involved in the development of these technologies, are struggling to understand how these same technologies will impact on their ability to do business, and engage with their markets. The Leavitt Model (Leavitt, 1965) highlights the need to be aware of the complex nature of change (see Figure 1).

Figure 1: Leavitt model
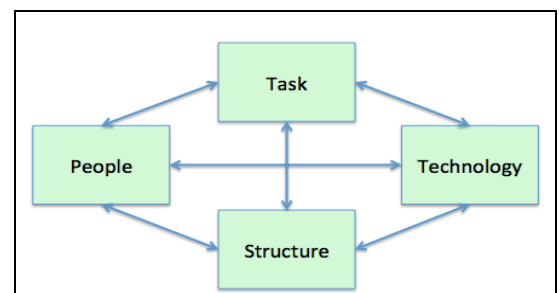
An organization's tasks, people, structures, and technologies are linked and, irrespective of where the change materialises, it will have an effect on the other three components of the model. Furthermore, the more disruptive the change the greater the impact.

However, what an organization can do to more effectively manage change is to develop its ability to sense and quickly respond to new opportunities. As technology is at the heart of what organizations do, building a responsive and flexible capability in technology will help lay the foundations for an organization to embrace change as an enabler for competitive advantage (McLaughlin, 2012). This point is equally important to both public and private sector organizations. The need to focus scarce resources on those capabilities that give you a competitive edge, be it through low-cost or world-class service delivery, is vital to correctly position the organization in a way that allows it to respond to internal and external opportunities and threats. Understanding *when* and *where* to make strategic interventions in order to build and improve performance is a capability in itself, and one that organizations operating in increasingly competitive markets need to develop.

1 The Nature of Transformational Change

To say that most organizations are poor at managing change would be to grossly oversimplify the nature of change itself. As we know, change comes in many forms, ranging from simple to complex in nature. Most organizations handle the simple, or less complex changes well, and these can include anything from moving office, to upgrading a server farm. A good way to visualise the different ways change can materialise is through the Change Spectrum (Paton & McCalman, 2000).

Figure 2: Change spectrum
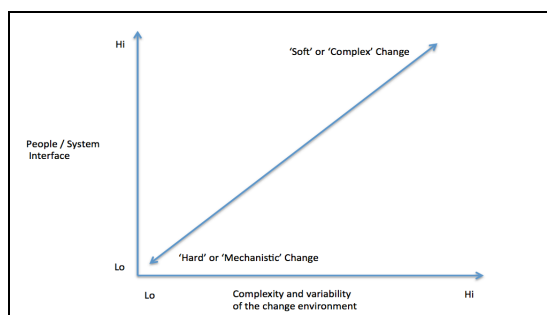
The two variables used to qualify where change resides on the spectrum are the impact the change has on 1) the people / systems interface, and 2) the complexity and variability of the change environment. At the lower end of the spectrum the change environment is stable and the impact the change will have on the people and how they interface with their systems is

minimal. These changes are usually handled well when good basic change or project management techniques are applied in a systematic manner.

However, when the change manifests at the other end of the spectrum (namely, where there is little understanding of how the environment will react to the change, and the way the people/systems interface will radically change) then the organization is faced with a transformational change. Understanding the type of change the organization is dealing with is vital, as very different methods are needed to manage the different types of change. Mechanistic changes can be managed through the application of good project management. A clearly defined objective, time line, resource commitment, and work breakdown structure can quickly define the steps to be completed even before the change project has been initiated. However, for complex changes (including transformational changes) there are many unknowns at the beginning of the project – especially in terms of cost, time, resource loading, and activities. The reason for this is due to the increased level of complexity; and failure to accept or indeed understand the complex nature of these types of changes is often traced to people-related management issues. Many Total Project Management Models (TPMMs), such as PRINCE or SSADM, go a long way to addressing these issues. However, a common failure point in transformational change projects is still a failure to view the change holistically (BCS, 2004).

This issue is becoming more relevant in IT-driven transformational projects. Without a clear view of how the technology will impact the organization in terms of operational effectiveness, business alignment, work practices, user interaction, or cultural impact such organizations run the serious risk of failing to delivery effective change. Couple to this the high costs associated with IT transformational projects, and failure could seriously impact the future viability of the organization (Flyvbjerg & Budzier, 2011).

2 The Changing Role of Technology within Organizations

Technology has gone from being a competitive enabler in the early 1980s to being a cost centre managed commodity in the late 1990s, to once again being a competitive enabler. The difference now is that the technology landscape contains elements of both cost centre commoditised technologies (asset management, roll-out and refresh systems, infrastructure, and service management) and competitive enabling activities (Bring your own device (BYOD), cloud access and hosting,

outsourcing, data analysis and visualisation, and massive open online courses (MOOCs)).

The challenge organizations now face is understanding the impact these change activities will have on their operating and working environments. The concept of path-dependency must also be considered when it comes to managing change. In effect, this relates to how technology-driven changes have been deployed in the past, and how the organization will use this thinking to drive changes in the future. The problem here is that technology is becoming more ingrained in the fabric of organizational day-to-day life, and technology-driven projects are having an increasing impact on how individuals work. Technology is in many cases blurring the lines between work and home life. Therefore, the widespread social and economic impact of change needs to be considered more clearly. As a consequence of this the methods for delivering technology-driven changes will differ depending on where along the change spectrum the change resides. What

organizations must do is understand the type of change being considered, and its scope and impact across people, technology, work practices, and the organizational structure. To fail to do this and apply the wrong approach is as ineffective in terms of meeting the overall objective as it is wasteful of time, and resources.

3   Where are you on the Change Spectrum?

The nature of change that an organization may be facing may not always be easy to define, and a failure to interpret the type of change can mean failure to engage with key stakeholders, the development of unrealistic timelines, and an underestimate of cost and resource requirements; all key determinants in driving successful change.

Table 1 provides a breakdown of the differences between *Hard* and *Soft* problem attributes that, in turn, describe the type of change being considered.

Table 1: Problem statements (Paton & McCalman, 2000)

Hard or *Mechanistic* Change	*Soft* or *Complex* Change
Problem Descriptors	**Problem Descriptors**
Objectives, constraints and performance indicators are predominantly quantifiable.	At best subjective, interrelated and semi-quantifiable objectives will be available.
A tendency towards static environmental forces.	A volatile and complex environment will prevail.
Timescales known with reasonable certainty.	Fuzzy timescales will predominate.
The environment of the change will be well bounded with minimal external interactions.	The environment of the change will be unbounded and characterised by many internal and external interactions.
The problem of change will be capable of clear and concise definition.	It will be difficult to define problem characteristics.
Change may be defined in systems / technology terms.	Change will be defined in interpersonal and social terms.
Resources required to achieve a solution will be reasonably well known.	Resource requirements will be uncertain.
Potential solutions will be limited and knowledge of them will be obtainable.	There will be a wide range of solutions, all of which may appear relevant and interconnected.
Structured approaches will produce results.	No clear solution methodology will be visible.
Consensus on the best way forward will be easily reached.	Consensus on the way forward and a shared perception of the problem will not exist.

The reality is that these problem attributes define the two ends of the spectrum, and most change will reside somewhere along the line between. When considering the nature of the change, statements from both columns will resonate, but what the organization will find is that one list will dominate more than the other.

There is a warning, however. The assessment of the change problem against these statements is based on the organization first having a clear and accurate view of how the change will impact it. This gets us back to the need for a

holistic or end-to-end view of the organization. This can present some significant challenges when we consider the increasingly complex nature of organizations, and the speed at which change is required. However, adopting a process view of the organization as opposed to the more traditional functional view can help drive clarity through the change process. In effect the organization identifies those capabilities that are core to its competitive advantage. Then, by considering the value networks (value chains) that are central to the effective and

efficient delivery of their respective business lines, the organization can assess how desired change will impact its respective performance along these value networks. It is fundamentally important that any organization has the ability to assess the wider implications of change to its business, and not just assess change from a functional or departmental perspective. If assumptions are incorrectly made about the scope of impact, timeframe to deploy, social impact across the organization, and consensus, the change may be incorrectly defined, and the wrong methods applied to implementing the change.

The nature of transformation change implies a shift in how the organization will operate and perform. Revisiting Leavitt's model (Leavitt, 1963) this means a change of this nature will impact not just technology, but also people (employees and customers), work practices, and organizational structures. To effectively manage complex change requires an interventionist approach.

Figure 3: Stages of an interventionist approach to change
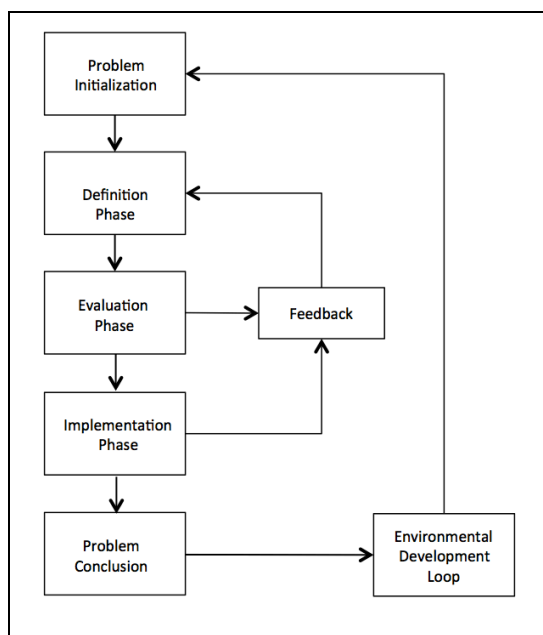
This approach is necessary if a change initiative is to effectively 'sense and respond' to the effects of the change in real time. Because of the complex nature of the change environment it cannot be assumed that the steps identified, as part of a change programme, will not cause some unplanned, or undesired effect on the overall change initiative. Organizations must, therefore, build this *sense and respond* mechanism into their approach to managing complex change. This ability to sense and respond is highlighted through the feedback and environmental development loops. The feedback loop ensures that the changes are being implemented in the right way, whereas the

environmental development loop looks to ensure the right and relevant changes are being implemented. The ability to not only focus on the technical issues in deploying a transformational change, but also to focus on the organizational-wide potential impact is key to getting it right. Examples of where organizations have bought into the technology without really understanding the impact it would have on their businesses abound. The dot.com crash is a prime example, but so also is the way the UK banking sector off-shored its call centre activity in the 1990s. Certain banks realised quickly that although the technology supported a *follow the sun* customer support model, the key stakeholders – the banks' customers – liked to talk to people with local or recognisable UK regional accents. After heavy financial investment, this has resulted in many of the UK commercial banks moving their call centres back to the UK (Zook & Samers, 2011).

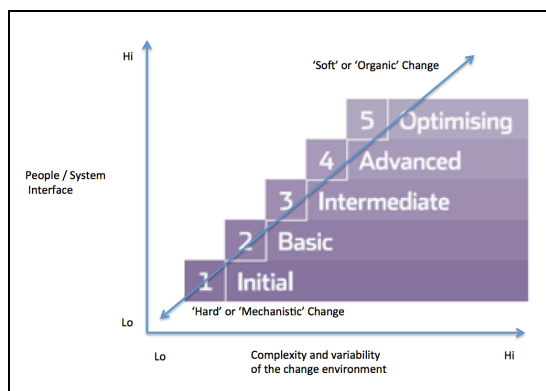## 4 The Relationship between Capability Management and Managing Change

As stated before, trying to predict the scope and impact of a transformational change event is a risky endeavour. Certainly, by adopting a more holistic view of the organization and how it is structured from a value chain (core business process) perspective will help predict the scale and location of the impact of change. When assessing the nature of the change, there are certainly key points to consider; these will be covered later in this white paper. However, developing an organizational ability that ensures the organization is ready and capable to meet the change is vital. Whereas some mechanistic changes may be implemented through the adherence to a defined process, more complex (transformational) changes require the ability to deviate and modify key aspects of the change initiative based on the response of stakeholders to the change as it is being made. Understanding, and managing in this type of environment requires a level of capability maturity based on stakeholder engagement and management, communication, business alignment, project management, and leadership – irrespective of whether the change is technology-driven. By developing a capability in these areas the organization will be better placed to identify, and implement the most appropriate improvement initiatives to drive the change forward.

5 How the IT-CMF identifies and enables Areas for Change

Because the IT-CMF takes a capability view of the organization, the manner in which the organization senses and responds to environmental factors, communicates, and strategically and operationally manages

technology-enabling resources are at the core of how capability maturity is assessed. By simply looking at the maturity levels it can be seen that lower levels of maturity (Level 1 and Level 2) usually align to the bottom end of the spectrum (*Hard* or *Mechanistic* change), with the increasing levels of maturity driving more *Soft* or *Complex* changes.

At lower levels of organizational maturity the implementation of changes that impact capability improvement, in terms of understanding their impact on the organization as a whole, can be considered straightforward. However, as the organization tries to effect more complex changes a more holistic intervention approach (see Figure 3) should be considered. If we look at the key stages of the interventionist approach it can be easily shown how the IT-CMF can be used to support this approach, but also highlights how the organization needs to first clearly define the type of change required, and then put in place the necessary support mechanisms to effectively manage the change to a successful conclusion.

Figure 4: Change spectrum and maturity overview

Table 2: Using the IT-CMF to support an interventionist approach to change

Key Stages of the Interventionist Approach	Key Considerations	Using the IT-CMF to Support and Enable Change
Problem Initialization	Understanding the need for change	What is the current level of maturity for core capabilities necessary for competitive advantage? *(IT-CMF High-Level Assessment and IT-CMF Body of Knowledge (BoK)).*
Definition Phase	What type of change is required (Hard/Soft)? What is its scope and perceived impact? Who are the key stakeholders?	Identify the level of maturity that exists across the organization. (*IT-CMF High-Level Assessment)* Identify what capabilities need to be focused on, and how they influence / impact other critical capabilities and how other capabilities affect them *(IT-CMF BoK)*.
Evaluation Phase	What needs to change across the organization, when it needs to change, and how the change should be structured.	Agree the level of maturity that is appropriate for the organization at a capability level, and what the actual maturity level is *(Critical Capability (CC) Level Assessment)*[1]. Identify the actions required to progress up through the maturity levels *(IT-CMF BoK and Practices, Outcomes, and Metrics (POMs))*
Implementation Phase	Making the change happen. Ensuring key stakeholders are involved and have a sense of ownership and assessing progress against the agreed plan.	Provide education to key internal change champions / change agents of the IT-CMF *(IVI Tiered Training Programme)*.
Problem Conclusion	Evaluate the impact and success of the change. Ensure the changes are embedded.	On completion of the change implementation, conduct a re-assessment of the capabilities selected for improvement *(CC Level Assessment)*.
Environmental Development Loop	What impact has the change had on the operating environment? What follow-on actions now need to be considered?	Conduct a gap analysis of realised versus expected improvements. (*Benefits Assessment Realization (BAR))*

---

[1] If the organization has a low BAR (Benefits Assessment and Realization) capability it will struggle to change effectively. Organizations may also consider assessing IM (Innovation Management) capability as it can be very relevant for certain industries and also is often central to transformational change.

Through this intervention process the IT-CMF can provide support and clarity around identifying what needs to change as part of a transformation programme. Then, through the IT-CMF's body of knowledge (BoK), which underpins the framework, specific areas for improvement can be identified for targeting in a way that will directly build capability. For the transformational change to be successful good project and change management techniques will still need to be applied. However, the IT-CMF will provide the organization with a roadmap for change that can be used to define how to improve competitive capabilities, and to help assess the nature and scope of any changes across the organization.

If an intervention strategy approach is to be supported, as outlined in Table 2, the organization will need to:

- Have an excellent understanding of the need for, and potential impact of, a transformational change on the organization.
- Demonstrate excellent leadership in terms of ownership and setting the priority for change.
- Apply project and programme management techniques to identify and meet milestone deliverables.
- Identify and manage all the stakeholders in terms of expectation setting, buy-in, and engagement.
- Assess the cost versus benefit pay-off for the change across the organization.

Once the organization has a clear understanding of the need and type of change required, the next stage is to understand what new or improved capability this change should develop for the organization. Once this is known, the IT-CMF can quickly provide the organization with an overview of how the capability (or capabilities) currently perform, and what the organization can do to improve them.

6   Developing a Change Capability across the Organization

Identifying the type of change and understanding the impact the change will have is vital if the change initiative is to be successful. This will require the organization to do three things:

- Develop a more holistic view of how it operates *(what and where are its value networks?)*
- Develop a capability view of how it aligns critical resources to making the organization competitive. (on *which capabilities do the value networks depend?*)
- Develop a *sense and respond* capability to support the deployment of complex change. (*Are the right changes being implemented in the right way?*)

However, there are other key considerations, and prerequisites that the organization must also meet in terms of operationally preparing for any change programme.

- Develop a clear and visible link between the project and the organization's key strategic priorities, including agreed measures of success.
- Ensure there is tangible and accountable senior management (Board level) ownership and leadership attached to the project.
- Ensure the priority and need for the change is effectively communicated to all stakeholders in terms that make sense to them.
- Ensure there is effective engagement with all key stakeholders.
- Engage individuals to manage and drive the change with the necessary skills and proven approach to project management and risk management.
- Break down the change initiative so that small wins can be realized and communicated through the course of the project.
- On completion of the change initiative, assess the impact of change in terms of performance improvement.
- On completion of the change initiative, make sure the change has been embedded and accepted as the new *standard* practice.

7   Concluding Remarks

For many, transformational change is seen as more of an art than a science. However, by understanding the type of change required an organization can quickly apply suitable and appropriate project management and organizational design / development techniques. Transformation change management, like any aspect of management, is about having the right toolset, and then applying the most appropriate tools or techniques for the job at hand. Therefore, any manager involved in complex or transformational change that involves technology should consider the IT-CMF as a significant addition, and enabler, to their managerial toolkit.

References

1. BCS, (2004). *The Challenges of Complex IT Projects*. The Royal Academy of Engineering.

2. Flyvbjerg, B., (2006). From Nobel Prize to Project Management: Getting Risks Right. *Project Management Journal,* 37(3), pp. 5–15.

3. Flyvbjerg, B. & Budzier, A., (2011). Be Riskier Than You Think. *Harvard Business Review*, (September), pp. 23–26.

4. Palmberg, C. (2002). Technological systems and competent procurers—the transformation of Nokia and the Finnish telecom industry revisited? *Telecommunications Policy*, 26(3), 129–148.

5. Paton, R. & McCalman, J. (2000). Change Management; A guide to effective implementation (2nd Ed), Sage, London.

6. Leavitt, H.L. (1965). Applied Organizational Change in Industry: Structural, Technological and Humanistic Approaches, in J.G Marsh (ed.), *Handbook of Organizations*, Rand McNally, Chicago.

7. McLaughlin, S (2012). Using the IT-CMF to build Competitive Advantage, *IVI Executive Briefings*. http://ivi.nuim.ie/latest-publications.shtml

8. McLaughlin, S (2012). Positioning the IT-CMF: A Capability versus Process Perspective, *IVI Executive Briefings*. http://ivi.nuim.ie/latest-publications.shtml

9. Zook, M., & Samers, M. (2011). 7 Tele-mediated servants and self-servants of the global economy: labour in the era of ICT-enabled e-commerce. *Handbook of Employment and Society: Working Space*, 124.

Special Thanks

Special thanks to the following for reviewing and helping shape this white paper:

Sheila Upton.
Tom Geraghty.
Jim Kenneally.

About the Author

Dr Stephen McLaughlin is the Head of Research and Development at the Innovation Value Institute (IVI). He is also a Senior Research Fellow with the University of Glasgow. Stephen can be contacted at: stephen.mclaughlin@nuim.ie

This white paper was edited by Tom Keogan, TeKcomm Technical Writing.

About IVI

The Innovation Value Institute (IVI) is a multi-disciplinary research and education establishment co-founded by the National University of Ireland Maynooth and Intel Corporation. IVI develops frameworks to assist IT and business executives to manage IT for Business Value and to deliver IT enabled business innovation. IVI is supported by a global consortium of like-minded peers drawn from a community of public and private sector organizations, academia, analysts, professional associations, independent software vendors, and professional services organizations.

Contact Us

For more information on becoming a member of the IVI Consortium, please visit www.ivi.ie or contact us at:

ivi@nuim.ie or +353 (0)1 708 6931