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Winning with ICT, Competing on Competency – an IT Capability Maturity Approach

Introduction

Information Technology (IT) is emerging as one of the most dominant forces that are changing business, and indeed society, today. Increasingly, we are seeing the collision of Moore's law with all types of business to produce great entrepreneurial and business opportunities. Although technology, driven by Moore's law, is advancing at a very fast rate, the management practices used to manage and apply IT appear to be lagging significantly. Despite Nicholas Carr's assertion that "IT doesn't matter" many firms are increasingly using IT to create and sustain competitive advantage. However the challenges of technology complexity, demand growth, security, budget and many others make the use and conversion of technology into value unpredictable and risky.

The IT profession is in a catch 22 scenario at present. IT departments are underperforming and company management is unwilling to fund IT: in fact less funding is the dominant strategy these days. CEOs invest in those areas of the business that contribute to the core objectives of the business, typically looking for growth and margin, or new successful products and services. IT departments consume so much of their available resources to just maintain current performance levels (and do not always succeed in even achieving this), that there is little capacity for investing in innovation. This situation can continue to be a constantly downward spiral, unless IT can move from a reactive to proactive posture.

KEYWORDS: IT Capability, Business Value, Maturity Frameworks

The Core Issue

The core issue is that IT management processes are fundamentally undefined at an international, intercompany and profession level. ICT departments have developed their own processes to deliver their responsibilities. They use best practice and adopt solutions such as CMMI and ITIL in some process areas, but they are mostly dependent on the intelligence, background experience and heroic deeds of their management and best people.

As the industry matures it needs to standardise what is expected of IT executives, IT professionals and indeed users of IT. The absence of a clear European-wide e-Skills competency framework is leading to inefficiencies in the growth and utilisation of both the potential of IT and the IT talent pool. Given that there is a global shortage of such talent, Europe cannot afford to allow this inefficiency to continue. Thus, a competency framework coupled to a maturity framework is required. This will enable schools, tertiary education establishments, employers, training

companies and recruitment agencies to operate in a more joined up manner.

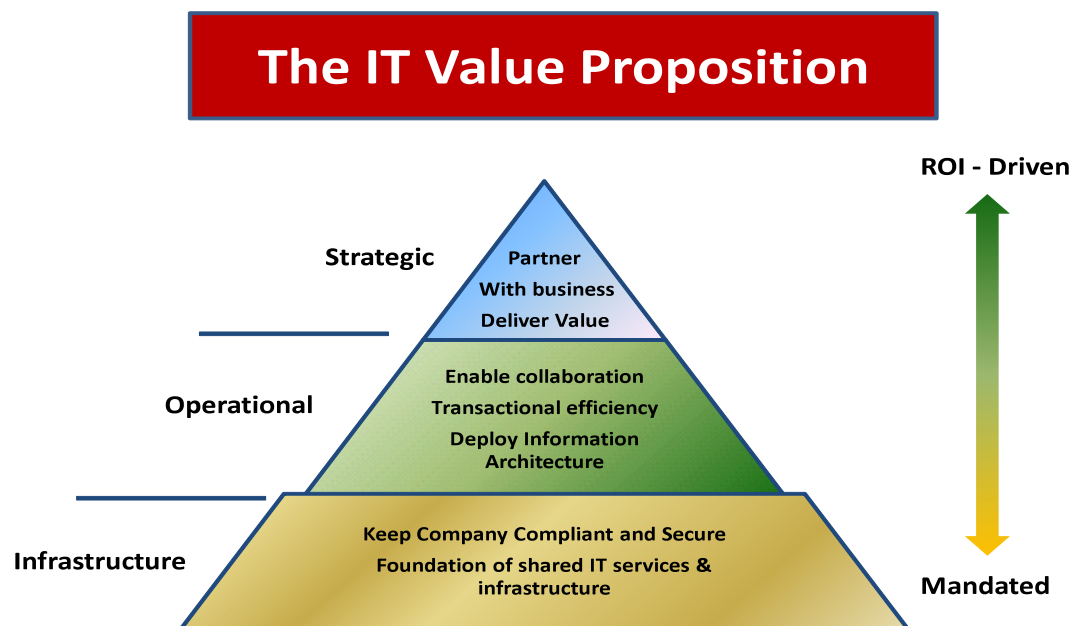
Despite the complexities of IT, in some ways the formula for success is quite simple. The core competencies required to deliver across the spectrum of IT management need to be understood and practised by the IT department. The IT team members need to be trained and capable of executing these IT management processes.

Delivering Business Value

For any IT organisation to demonstrate its capacity to deliver business value and to use

IT to build innovative business-wide creativity, it must establish a foundation of solid compliance and effective delivery. There exists a mandatory level of performance from IT that must be constantly satisfied before IT can move up that value ladder within the organisation. Figure 1 captures this model. For IT to achieve at the CEO level, and add the value to the business that should be expected for the proportional cost it incurs, IT must operate at the highest levels of performance. Both IT professionals and IT departments can capitalise on the available knowledge provided through IVI's IT-CMF.

Figure 1: The IT Value Proposition



Source: Cooney. European e-Skills Conference Brussels, 20 November 2009

The Innovation value institute (IVI) based in Ireland is introducing a unifying approach and framework – called the IT Capability Maturity Framework (IT-CMF) – to help organisations systematically manage IT for business value and innovate more predictably and profitably with IT.

IVI is targeting a key current gap in the IT Profession Landscape – that of the inexistence of a unifying body of knowledge (BOK) which is well structured and which can be easily maintained as the technology and profession moves forward. IVI has established a unique consortium of six communities to attempt to create this BOK and associated framework using an open innovation approach. Use of the IT-CMF to help improve IT capability can help IT organisations and professionals move from

being reactive to being proactive. IVI has developed a process to help find and document for IT professionals a range of practices that are novel, emergent, good, best and indeed "next".

The IT-CMF presents a framework that helps IT to be used as an innovation resource, that enables a CIO to be perceived as a chief innovation officer, and that helps improve the probability, predictability and profitability of IT-enabled innovations. The IT-CMF describes five different maturity levels and four inter-related macro-processes which can be employed to better use information technology for value. Using the IT-CMF as a design pattern (see Figure 2), CIOs can help drive four types of improvement shifts for IT capability.

- Move the business model of the IT capability from a cost centre to a value centre.
- Move the IT Budget from a runaway scenario to a sustainable economic model.
- Move the value focus from purely measuring total cost of ownership to demonstrating optimised value.
- Move the perception of IT from that of a supplier to that of a core competency.

Figure 2: The IT Capability Maturity Framework

IT-CMF				
Maturity Levels	Managing the IT Budget	Managing the IT Capability	Managing IT for Business Value	Managing IT like a Business
5. Optimizing	Sustainable Economic Model	Corporate Core Competency	Optimized Value	Value Centre
4. Advanced	Expanded Funding Options	Strategic Business Partner	Options and Portfolio Management	Investment Centre
3. Intermediate	Systemic Cost Reduction	Technology Expert	ROI & Business Case	Service Centre
2. Basic	Predictable Performance	Technology Supplier	TCO	Cost Centre
1. Ad Hoc		← Beginning →		

Source: Curley (2004) [1]

In the past century, many of the leading innovations were enabled by electrification and relied on the delivery of relatively inexpensive power. In this century, many of the leading innovations will likely be enabled by “knowledgefication”, the flow of cheap knowledge (and indeed may also provide value in an era of more expensive energy) [2]. In fact, the incoming commissioner for Research, Innovation and Science in her hearing at the European Parliament has called knowledge “the crude oil” of the 21st century. It is clear that information technology, and the information and knowledge flows that it enables, will be critically important in this century. Faced with many global challenges like climate change, energy diversification and efficiency, and aging society, the application of information technology offers many potential solutions through replacing atoms by bits; for example, reducing the energy intensity of everyday activities – such as a teleconference meeting replacing a meeting which requires a physical journey. In order to fully reap the benefits that IT promises, we need both a workforce that can skilfully apply IT to seize opportunities and solve problems while reliably operating these solutions and a broader user community – or even society – that has a high level of digital literacy. Whilst companies such as Apple, which deliver highly intuitive user interfaces, lower the skill level

required to interface with solutions, a base level of digital literacy and competency will be required.

The role of the CIO is of pivotal importance. Both the business community and the company internal IT community look for the leadership to direct IT to that elusive high performance contribution. The absence of an acknowledged educational and experiential progression path makes the capability development for senior IT managers somewhat ad-hoc. Other professions are so much better supported, with consistent role and responsibility definitions, and well engineered educational and certification programmes. This scenario has greatly contributed to an industry-wide underachievement report for IT. The maturing of IT skills is the key for longer term sustained and industry-wide improvement.

IT as a discipline is still in the early stages of maturity; yet as we see the pace of technology evolution and change accelerate, we can observe an increasing gap between the potential of IT and our collective ability to turn this rapidly evolving technology into value. The absence of real value measures for IT solutions and services deployments causes a credibility gap and also leads to a gap in improvement efforts due to the absence of a

baseline. In addressing the value deficit a key action is to take an overarching approach of managing IT for business value [2]. By taking a process and competency improvement approach, organisations can move from being reactive to being proactive and consequently to delivering IT innovations which are likely to be more predictable and ultimately profitable.

Developing an Action Plan

Industry has a growing dependency on IT and IT is a serious competitive variable for companies. IT is also a major competitive variable at the European Union level. Research into the demand for IT skills in the coming five years clearly points to a shortfall[5].

'Bonn, Milan, Brussels, 3 December 2009
- empirica and IDC EMEA Government
Insights anticipate that the EU labour market may face an excess demand of 384,000 ICT practitioners by 2015. The number of ICT professionals in Europe was 4.7 million in 2007 and is forecast to be between 4.95 and 5.26 million in 2015 depending on five foresight scenarios. Accordingly the e-skills gap, or unfilled vacancies, will amount to between 1.7% and 13% of the existing occupations by 2015.'

Source: empirica and IDC, e-Skills Monitor 2009 [3]

Key actions could include:

- Train IT leaders to be business leaders. IT leaders need to learn, acquire and demonstrate business acumen so that IT investments deliver real value to the end user and customers. The Innovation Value Institute (www.ivi.ie) has developed several professional diplomas around Managing and Measuring the Business Value of IT and has begun pilot collaboration with EFMD (the European Foundation for Management Development) to diffuse these courses to European business schools.
- Apply a maturity model approach (such as the IT-CMF) to stabilise and control the processes to deliver and operate leading edge IT solutions. Approaches as the IT Capability Maturity model remove the need for IT fire-fighters and replace this with a need for skilled IT professionals who operate in a rigorous, disciplined and professional way.
- Position IT more prominently in the organisation. As the IT Profession matures, more opportunities will arise to move IT from the backroom to the boardroom and, because IT has a horizontal view of all functions in a business, we should see more opportunities for CIOs to function at the board level. In fact, the profession needs "celebrity" CIOs who actively promote and advance the brand of the IT profession through their demonstrable acumen and influence.
- Identify and put in place suitable IT leaders. In the IT industry we need lots of skilled professionals and managers who can solve problems and deliver solutions using IT but, just as importantly, we also need IT leaders who can identify what problems should be solved and what opportunities should be seized using IT. It is the appropriate training of IT leaders - producing professionals who have the appropriate mix of technology, business, inter-personal and communications skills - that will improve the quality of the IT profession and improve the quality and value of the solutions delivered.
- Apply greater structure and organisation to the EU, and the IT profession. In order to deliver the increased capability that is required. The EU can be a leader and innovator in playing a significant coordinating and brokering role, including a push for standardisation. IVI can be the source of knowledge, and can also be a key player within this model.
- The Innovation Value Institute has developed the process maturity tools over the past four years through their International Consortium, using a design science approach and a collaborative effort between IT practitioners and academics. This body of knowledge spans the full and broad range of IT management processes and has incorporated existing best practice guidelines and standards [4].
- Leverage the IT-CMF. An IT organisation can leverage the IT-CMF through developing the skills of its practitioners, and, in turn, they can implement the processes, and continue to ratchet up the maturity of the IT processes. This competency development of the IT team is essential to sustain improvements. The IT personnel can grow and develop through this knowledge acquisition in a systemic and measured manner.
- Identify where attention is required and apply the IT-CMF to these areas. The establishment of repetitive, documented, practiced, and competency-based processes are delivered through the IT-CMF. The IVI has structured its 33 critical processes to be delivered in a consistent and readily applied format. Online assessments immediately determine existing maturity levels and pinpoint where improvement attention is needed. The IT personnel responsible for these processes can quickly attain the specific knowledge needed for the processes most urgently in need of focus.
- Enable and reward personal professional development. The IT professional needs specific capability development. Ideally this dovetails with the company's need for his competency development. However, the

effort to personally develop needs to be motivated and rewarded through recognised academic achievement. The University infrastructure needs to be a component of our EU IT professionalism solution design.

- Focus on the EU. The competency challenge for IT exists worldwide. For the EU we need a coordinated solution. This starts with defining a clear mandate from the EU Directorate.

References

1. Curley, Martin (2004) *Managing Information Technology for Business Value*, Intel Press, Oregon, US.
2. Andersson, Thomas, Curley, Martin, Formica, Piero (2010). *Knowledge Driven Entrepreneurship – The Key to Social and Economic Transformation*, Springer.
3. Didero, M., Husing, T., Korte, W. (2009) *Monitoring eskills demand and supply in Europe* Empirica/European eskills forum.
4. Curley, Martin and Kenneally, Jim (2009) *The IT Capability Maturity Framework*, Innovation Value Institute, National University of Ireland, Maynooth.
5. Curley, Martin (2007) *Introducing an IT Capability Maturity Framework*: in Cardos, J., Cordeiro, J. and Filipe, J., (Editors) *Proceedings of the Ninth International Conference on Enterprise Information Systems*, Madeira, Springer.

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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 organisations, academia, analysts, professional associations, independent software vendors, and professional services organisations.

Contact Us

For more information on becoming a member of the IVI Consortium, please contact us at www.ivi.ie, ivi@nuim.ie or +353 (0)1 708 6931

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