

MKS

It's All About Process

A White Paper
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1. INTRODUCTION

As long ago as 1931, the distinguished American economist, William Edwards Deming said that *"If you can't describe what you are doing as a process, you don't know what you're doing!"*

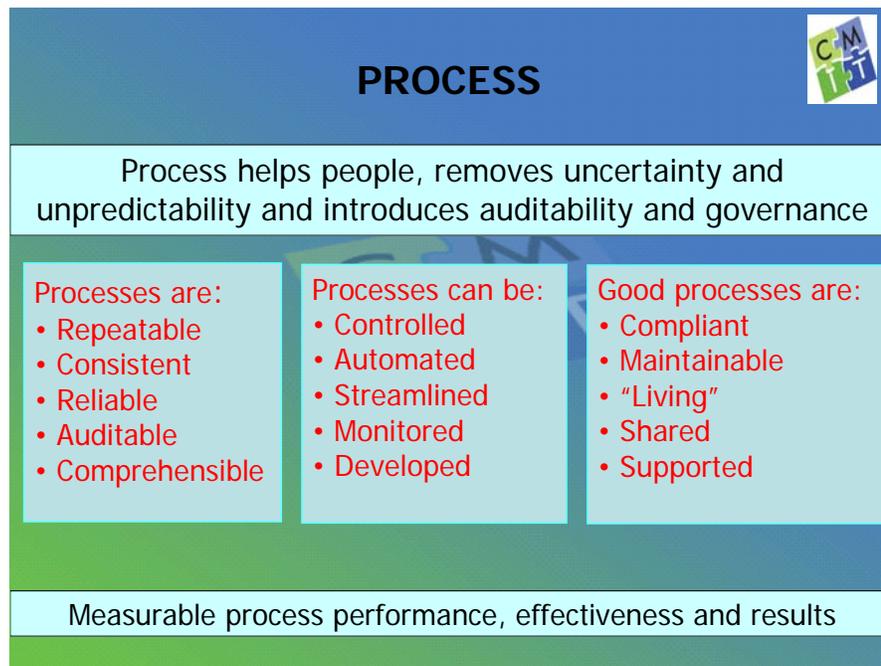
In IT today it is still difficult to describe how a business requirement ends up as part of a functioning business service. This is almost never written down as a single contiguous process. At best we seek to articulate this across several different process methodologies, at worst we recognise no process methodology at all and re-invent the wheel with each new business development.

This white paper will look at these issues with emphasis on two process methodologies that can work together to encompass the whole of this process. We will consider the CMMI process methodology for software engineering, and the ITIL Best practices for service delivery. We will bridge these processes and deliver them as one IT application process and we will look at MKS's process management platform, MKS Integrity, as an example of superior technology for integrated IT process management.

2. WHY IS GOOD PROCESS SO IMPORTANT?

In IT it is essential that we should know what we are doing. It is equally essential that we should know, record and understand what we have done and how we did it. This is the essence of balanced control with good governance and to achieve this we need to ensure that we follow a defined, consistent and repeatable process.

Process is there to help people and it has some very important attributes that are essential to the delivery of quality IT Services as shown in picture 1 below.



Picture 1: The attributes of Process

A most significant attribute of good process is that it is measurable against industry accepted criteria or standards. When a process methodology refers to certification at a given level, or to compliance with an industry standard then this is usually a result of independent audit and assessment.

3. INDUSTRY STANDARD PROCESS METHODOLOGIES

Although there are many possible process methodologies, four predominate in the IT industry. These are SixSigma, CMMI (Capability Maturity Model Integration), ITIL (IT Infrastructure Library and ISO 20000) and CoBIT.

With all these possible choices for process management an enterprise may seek to implement two or more process methodologies but in doing so there is a danger of an IT organisation becoming “process heavy”. Each process methodology carries with it commitments of effort and time to implement, resource to communicate, support, monitor and enforce. There is significant opportunity for overlap of processes, duplication and process redundancy (where part of a process methodology remains unused because it is superseded by other processes).

Also a problem is that the IT organisation can become more concerned about process and certification than it is about the objectives of the processes themselves and why they were introduced.

For these and other reasons, in this paper we will recommend only two methodologies, CMMI and ITIL, which are complementary and cover the whole application life cycle. We will also recommend that to avoid over concentration on the academic attributes of process, that the implementation of any methodology is supported by the practical implementation of a process management solution like MKS Integrity that will support the implementation of the process methodology.

4 THE COMMON OBJECTIVE OF IT PROCESS

Fundamentally, an IT process should have, as its common objective, the delivery of a fully functional business/customer service. The IT process should be complementary to and supportive of business processes within the enterprise.

IT processes in turn are made up of a number of sub processes as follows:

- **Pre-development:** Acquisition and acceptance processes for business requirements and subsequent analysis and approval
- **Development/procurement:** Including subsequent testing and delivery mechanisms
- **Post delivery:** Service provision and ensuring delivery of fully functional business services exactly when and where the customer requires them.

5 SIMPLIFYING ADOPTION OF PROCESS METHODOLOGIES

With the emphasis on achieving the quality product and service that today's business/customer demands whilst at the same time reducing the potential for process complexity the following recommendations are made:

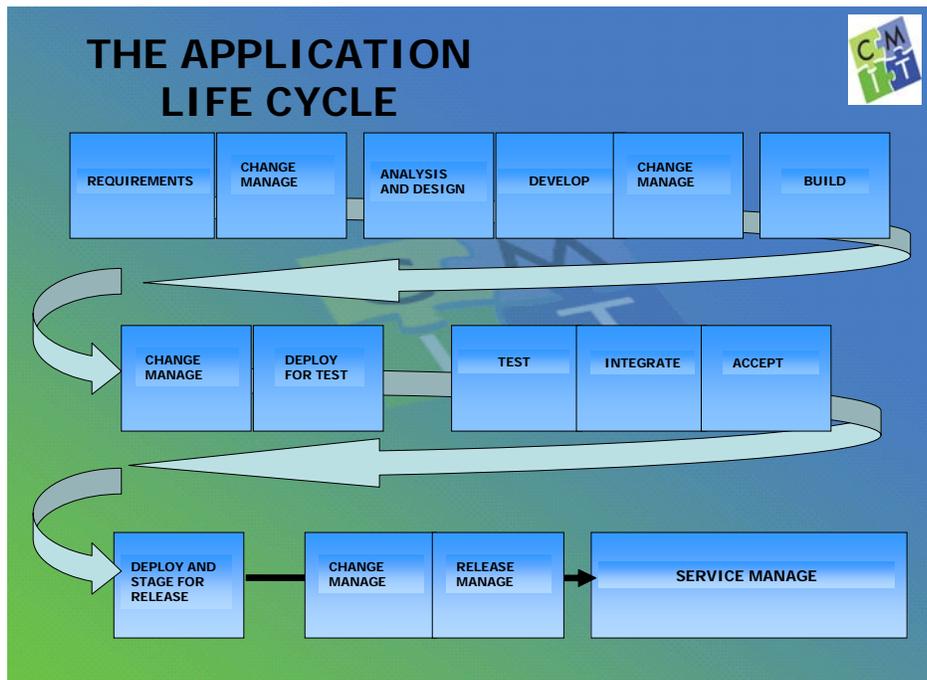
- Consider IT process holistically and as a supporting part of business process
- Look across the WHOLE application delivery life cycle (including service delivery) and try to articulate an overall contiguous process design.

- Adopt the minimum of process methodologies and use a process management solution like MKS Integrity to bridge those that you adopt
- Avoid independent stand alone processes that ultimately may conflict, overlap and duplicate with common process, and will detract from common process adoption.
- Do not seek certification beyond that which delivers business/customer advantage and delivers positive business return on the process investment.
- Do not forget the service aspects of any IT deliverable. There is no value to a quality functional product if it is not available when the customer demands it.
- Use MKS Integrity's process management technology that is flexible and supports any processes.
- Implement software like MKS Integrity that will provide synergy in process management and cost reduction through process simplification.

6 RECOMMENDATIONS IN DETAIL

An holistic view of the application life cycle, up to the delivery of a fully functional application service, shows a number of IT sub processes each with its own technical characteristics and functionality that require consistent and repeatable process.

One exception to this is the process of "change management". This IT process has common usage throughout the application life cycle and it is shown repeatedly in picture 2 below. Close analysis shows that the process is always the same discipline, but it is rarely commonly applied and is almost always an example of duplication of effort and resource. A process management solution such as MKS Integrity offers an implicit change control process that can be applied and repeated in a consistent manner wherever appropriate. Use MKS Integrity for process optimisation here.



Picture 2: The Application Life Cycle

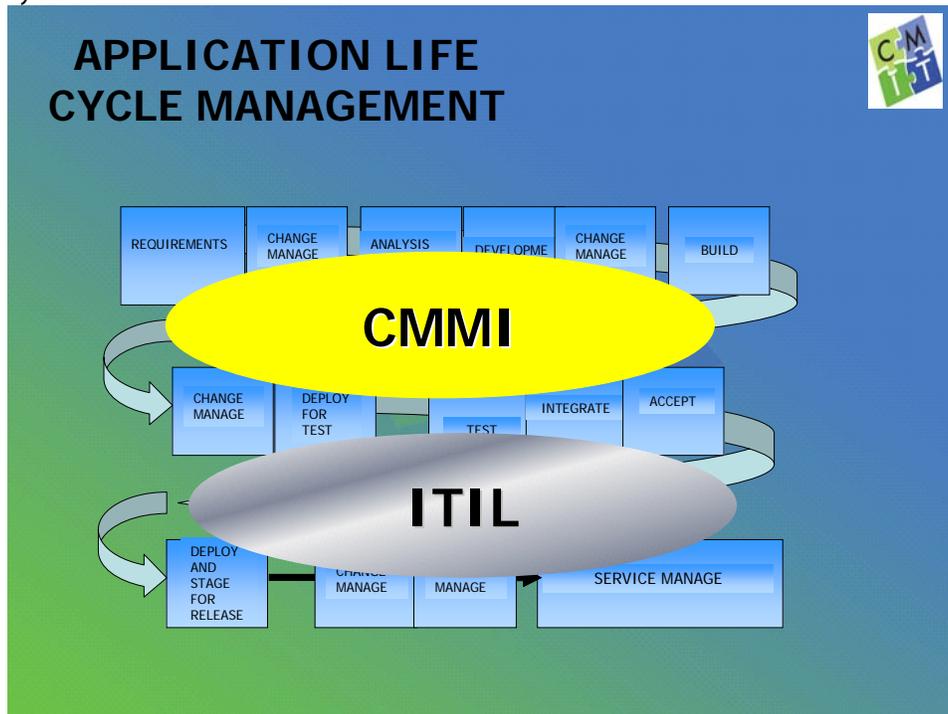
When considering the IT process holistically, it is important to recognise that no one process methodology is equipped to support all the necessary IT disciplines. A minimum of two process methodologies are required to cover both delivery of quality product and delivery of quality customer service from that product. In this paper we recommend the adoption of both CMMI and ITIL as complimentary process methodologies that can work in harmony to deliver a complete quality driven IT organisation.

CMMI (Capability Maturity Model Integration) is a process methodology for software engineering, and thus has as its objective the delivery of quality software product. ITIL is a set of best practices to ensure the availability and service from that quality product.

7 IT PROCESS METHODOLOGIES AND THE APPLICATION LIFE CYCLE

If we look again at this same application life cycle we see that CMMI applies itself to the design, development and testing aspects necessary to quality software engineering. It does not extend its capabilities to ensuring the quality and availability of the service provision to the customer. In these aspects of the application life cycle, ITIL is predominant (and currently exclusive) in its definition of best practices for service implementation and quality. But ITIL depends on quality products and does nothing to mandate the delivery of functional product to meet business/customer requirement.

In picture 3 below we can see the coverage of both CMMI and ITIL across the application life cycle.



Picture 3: Process Methodologies and the Application Life Cycle

7.1 Capability Maturity Model Integration (CMMI)

A Capability Maturity Model (a CMM) a reference model of mature practices in a specified discipline against which practitioners are appraised. CMMI is in fact the integration of four CMM's in the disciplines of Software engineering, Systems Engineering, Integrated Product Development and Supplier Sourcing.

CMMI appraisal is a common industry measurement against 6 Capability / Maturity levels. Maturity levels are most commonly referred to as a yardstick against which companies measure their relative IT performance in the CMMI disciplines. It is exceptional for a company to be certified at a maturity level of 4 or greater and normally this would be because of special market requirements (e.g. a supplier of critical government or public IT Services). The majority of aspiring CMMI companies will be certified at level 2 or 3 (or be aspiring to be so certified).

In summary CMMI can help integrate traditionally separate organisations, set process improvement goals and priorities, provide guidance for quality processes and provide a yardstick for appraising current practices.

In implementing the necessary process discipline to achieve CMMI certification applying process management software like MKS Integrity Suite has significant advantage as it provides a structured and practical implementation of the processes to be followed. The process implementation can be flexible and therefore easy for participants to follow and comply with.

7.2 IT Infrastructure Library (ITIL): ISO 20000

ITIL is a set of best practices for delivery of production IT services to the business/customer. The objective of ITIL is to guide the IT organisation towards IT service availability whenever and wherever the customer requires it.

As of 2006 ITIL Refresh V3 there are now 5 core competencies, Service Strategies, Service Design, Service Introduction, Service Operation and Continuous Service Improvement. Note the emphasis is on "service" not on "product".

ITIL is the only set of best practices specifically directed at production service quality and consequently most organisations that deliver applications with a service requirement will either be implementing, or considering, ITIL.

In Europe, where almost all major business enterprises have implemented some level of ITIL it is not uncommon to find a mature ITIL implementation in a company that is also certified at CMMI maturity level 2 and aspiring to level 3 certification.

An important advantage of MKS Integrity is that it is both designed and optimised for product development and delivery, and it also includes templates for service implementation and delivery in support of ITIL best practices.

7.3 Weaknesses of the CMMI and ITIL Coverage

CMMI concerns itself with the software engineering of quality products. Coverage of CMMI extends to every IT process that contributes to this objective. CMMI will therefore embrace requirements, through analysis, development, build, and all forms of quality assurance and

testing. Because CMMI is product oriented it does not address in its products the dynamics of service provision.

ITIL, by contrast, concerns itself with service quality but does very little to address the issues of product development. ITIL has only a limited role in testing or in application development other than to specify requirements of the production services. ITIL has a best practice "ITIL Application Management" that seeks to place service requirements in the design and development arena but this is rarely adopted with any effectiveness.

8 CONTIGUOUS IT PROCESS: BUILDING BRIDGES

The merits of both CMMI and ITIL as quality IT processes recommend them to IT organisations, which is why across all industry sectors there are examples of both process methodologies being adopted together within the same company. But this adoption comes with the fundamental weakness that although these methodologies are complimentary, they are not integrated. This means they are often implemented in silos with little cross communication, duplication of effort and resources, and subsequent overlap and discontinuity in process.

There has been one "academic" attempt to bridge this gap between ITIL and CMMI with the IT Service Capability Maturity Model developed by universities in the Netherlands. This is a CMM model to "bridge" the disciplines of software engineering and production service management it attempts to apply CMMI to services rather than products. There seems to be little current adoption of this model/process, almost certainly due to the lack of technology to support it.

By bridging these two methodologies and using a process management solution like MKS Integrity that will support both approaches, these weaknesses are addressed as the methodologies will work together and support each other.

The concept of contiguous process, and "bridging" between CMMI and ITIL has much to commend it and is recommended here. But in implementing such a bridge it is a pre-requisite that the implementation follow the traditional principles of "people" first, "process" second and only then "technology". In the table below (Picture 4) we represent this implementation process and consider:

★ PEOPLE: bringing the organisation together under the same common objectives		
★ ORGANISATIONAL BRIDGES: Commitment to working for the same goals		
Business Analysis Development Testing		Operations Business Service Customer

★ PROCESS BRIDGES: Developing a common and contiguous IT Process
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<p>From requirement to development to test</p>		<p>From test to pre-production and into live business /customer service with continuous maintenance and support.</p>
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<p>★ TECHNOLOGY BRIDGES: Installing a process manager capable of holistically supporting all IT processes and implementing the common contiguous IT process across the whole IT organisation. First the people, bringing the organisation together under the same common objectives</p>		
<ul style="list-style-type: none"> - Requirements Management - SCM and Application Change Management - Build Management - Test Management 		<ul style="list-style-type: none"> - ITIL Change and Release Management - ITIL Application Management - Business Service Management

9 AUTOMATED PROCESS MANAGEMENT

Automating process management has a number of significant advantages but these can be summarised as greater efficiency with greater governance and control. If the process management software adopted, is capable of automating IT process, then not only does it become easier and more efficient for IT staff to use, but implicitly it carries out the actions for them and therefore is controlled, consistent and repeatable.

To achieve these advantages the IT organisations requires process management software technology that is fully capable of automation, capable of supporting all necessary processes, and flexible enough to be able to support the common usage procedures of the organisation into which it is being implemented.

From direct experience (see the case study below) the author recommends MKS Integrity as an example of superior technology fully capable of both supporting CMMI and ITIL and also bridging the two methodologies.



10 CASE STUDY: IMPLEMENTATION OF AUTOMATED PROCESS MANAGEMENT

The author was previously (up to 2003) a project manager in HSBC Group (the world's 3rd largest global banking group). Primary responsibility was for the introduction of a global process for development change, build and production release of web applications, which by their very nature required global co-ordination and common development and delivery processes. In support of these responsibilities and in co-ordination with other colleagues, in 2001 MKS Integrity was selected as the global process management software for HSBC Group. This software and processes were successfully delivered into Hong Kong, USA, Canada, Brazil, France, India and the United Kingdom.

MKS Integrity allowed flexible definition of processes to fit both individual country culture but also met the common control and quality requirements of the HSBC Group. Because of this flexibility it was possible to develop process that reflected both development practices and link these through testing disciplines and tools to the Production ITIL service controls.

MKS Integrity proved to be fully capable of integration with existing operational tools for ITIL service management as well as harnessing the benefits of integration with existing development and test tools.

Three most important attributes of MKS Integrity were that it was:

- Embedded as part of the IT working desktop environment due to its browser and common security capabilities. This allowed it to be used commonly by all IT staff in a completely "neutral" fashion. The fact that it was used by business analysts, developers, testers, project managers, IT management, operations, technical and network services staff, demonstrated how flexible, easy to use and acceptable the product proved to be.
- Used to address the whole application life cycle as it offers functionality from business requirement, through development control, build and deploy integration with test and ITIL production services.

- Enhanced with supporting programs to automate process under the control of the process manager itself.

Between 2001 and 2003 all these features were exploited successfully within HSBC under the implementation project managed by the author of this paper.

11 CONCLUSION AND SUMMARY BENEFITS

Consistent process is without doubt, the single biggest contributor to reliability and therefore quality in both product and service delivery. Even without world class functionality, the consistent, repeatable and most reliable product and service will always win through. It may not be the fastest, it may not be the best — but as a customer you can trust it!

Using process management technology both automates and enforces common process, and leads to an organisation feeling comfortable with what it does, in control of what it does and from an auditing and governance point of view, transparent in what it does.

The following table identifies and groups the benefits that can be achieved through this model of implementation. On all metrics and measurement available return on investment can be expected in less than one year following this type of implementation.

BENEFITS TABLE	
COST	SAVINGS
	REDUCTION
	EFFECTIVENESS
EFFICIENCY	AUTOMATION
	RELIABILITY
	CONSISTENCY
	REPEATABILITY
	TIME TO MARKET
GOVERNANCE	COMPLIANT
	AUDITABLE
	LEGAL

Adoption of appropriate process methodologies, and superior process management software to support them, such as MKS Integrity, is highly recommended.