



IT-CMF

A Management Guide

Based on the IT Capability Maturity Framework™
(IT-CMF™) 2nd edition

Martin Curley | Jim Kenneally | Marian Carcary | Declan Kavanagh (Eds.)

IT Capability Maturity Framework™ (IT-CMF™)

A Management Guide

Other publications by Van Haren Publishing

Van Haren Publishing (VHP) specializes in titles on Best Practices, methods and standards within four domains:

- IT and IT Management
- Architecture (Enterprise and IT)
- Business Management and
- Project Management

Van Haren Publishing offers a wide collection of whitepapers, templates, free e-books, trainer materials etc. in the **Van Haren Publishing Knowledge Base**: www.vanharen.net for more details.

Van Haren Publishing is also publishing on behalf of leading organizations and companies: ASLBSL Foundation, BRMI, CA, Centre Henri Tudor, Gaming Works, IACCM, IAOP, Innovation Value Institute, IPMA-NL, ITSqc, NAF, KNVI, PMI-NL, PON, The Open Group, The SOX Institute.

Topics are (per domain):

IT and IT Management

ABC of ICT
ASL®
CATS CM®
CMMI®
COBIT®
e-CF
ISO 20000
ISO 27001/27002
ISPL
IT4IT®
IT-CMF™
IT Service CMM
ITIL®
MOF
MSF
SABSA
SAF
SIAM

Enterprise Architecture

ArchiMate®
GEA®
Novius Architectuur Methode
TOGAF®

Business Management

BABOK® Guide
BiSL® and BiSL® Next
BRMBOK™
BTF
EFQM
eSCM
IACCM
ISA-95
ISO 9000/9001
OPBOK
SixSigma
SOX
SqEME®

Project Management

A4-Projectmanagement
DSDM/Atern
ICB / NCB
ISO 21500
MINCE®
M_o_R®
MSP®
P3O®
PMBOK® Guide
PRINCE2®

For the latest information on VHP publications, visit our website: www.vanharen.net.

IT Capability Maturity Framework™ (IT-CMF™)

A Management Guide

Edited by:

Martin Curley, Jim Kenneally,
Marian Carcary, Declan Kavanagh

Contributing Authors:

Martin Curley, Jim Kenneally, Marian Carcary, Eileen Doherty, Gerard Conway,
Catherine Crowley, Conor O'Brien, Clare Thornley, Sinéad Murnane,
Louise Veling, Declan Kavanagh, Michael Hanley, Martin Delaney, Anna Browne



**Maynooth
University**
National University
of Ireland Maynooth



Title: IT-CMF – A Management Guide: Based on the IT Capability Maturity Framework™ (IT-CMF™) 2nd edition

Edited by: Prof. Martin Curley, Jim Kenneally, Dr Marian Carcary, Declan Kavanagh

Contributing authors: Prof. Martin Curley, Jim Kenneally, Dr Marian Carcary, Dr Eileen Doherty, Gerard Conway, Catherine Crowley, Conor O’Brien, Dr Clare Thornley, Sinéad Murnane, Louise Veling, Declan Kavanagh, Michael Hanley, Martin Delaney, Anna Browne

Publisher: Van Haren Publishing, Zaltbommel, www.vanharen.net

Editorial & design consultants: Rédacteurs Limited, www.redact.ie

Design & layout: Coco Bookmedia, Amersfoort – NL

NUR code: 981 / 123

ISBN hard copy: 978 94 018 0196 6

ISBN eBook (pdf): 978 94 018 0197 3

Edition: First edition, first impression, August 2017

Copyright: © Innovation Value Institute (a research centre of Maynooth University) / Van Haren Publishing, 2017

All rights reserved. No part of this publication may be reproduced in any form by print, photo print, microfilm or any other means without written permission by the publisher.

Whilst every reasonable care has been taken in the preparation of this publication, neither the authors, nor the editors, nor the publisher accept any responsibility for any errors or omissions in, nor for uses made of, the material contained in this publication. No warranties are made, express or implied, with regard to either the contents of this publication or its merchantability or fitness for a particular purpose. None of the authors, the editors nor the publisher shall be liable for any damages whatsoever, whether direct, indirect, special, incidental, or otherwise arising out of the use of this publication.

Trademark notices

Innovation Value Institute, IVI, IT Capability Maturity Framework, and IT-CMF are trademarks of the Innovation Value Institute.

All other trademarks used herein are the property of their respective owners. The use of any trademark in this text does not vest in the author or publisher any trademark ownership rights in such trademarks, nor does the use of such trademarks imply any affiliation with or endorsement of this book by such owners.

Preface

The IT Capability Maturity Framework (IT-CMF) is a framework specifically created to help organizations derive real, measurable business value from IT. This management guide helps IT leaders and professionals at all levels to understand IT-CMF and begin to apply it in their day-to-day improvement activities.

IT-CMF was developed to help organizations meet the challenges they face in managing the array of discrete but independent IT management disciplines focused on the generation of IT-enabled agility, innovation, and value. It is underpinned by proven concepts and principles that provide organizations with a coherent guide to developing IT capabilities that can help them innovate, grow, and prosper. With the advent of Social, Mobile, Analytics, Cloud and the Internet of Things (SMACIT), digital business transformation is top of the agenda for most organizations, and IT-CMF provides a body of knowledge, tools, techniques, and guidance for IT leaders and professionals to support their organization's digital agenda.

This management guide is derived from the comprehensive work of the Innovation Value Institute, as encapsulated in *IT Capability Maturity Framework: The Body of Knowledge Guide* (2nd edition, 2016).

What's in this book

This management guide is intended as a quick reference guide for those who wish to understand the essentials of IT-CMF or those who are implementing IT-CMF to manage IT value and IT-enabled innovation within their organizations. This book has four parts:

- ▶ Part A describes the background to IT-CMF, how it was developed and what makes it valuable as a framework for IT management. This covers the core concepts that underpin IT-CMF, its capability architecture, and an overview of how to use IT-CMF to manage capability improvement – including a brief description of each of the four phases in the Capability Improvement Programme (CIP).
- ▶ Part B presents high-level summaries of IT-CMF's four Macro-Capabilities and their thirty-six constituent Critical Capabilities.
- ▶ Part C outlines the next steps that someone embarking on an IT-CMF initiative might take – for example, to assess and benchmark their current capabilities and to launch an improvement programme.

- ▶ Part D (appendices) summarises the supports that the Innovation Value Institute makes available to those who are embarking on an IT-CMF initiative – these include assessment and training options, a summary of capability performance indicators for each Critical Capability, and descriptions of key artefacts (tools and templates).

About the Innovation Value Institute™

The Innovation Value Institute (IVI) was established in 2006 as a not-for-profit multidisciplinary research and education institute within Maynooth University, Ireland. It was co-founded by Intel Corporation and the university with the objective of creating an international consortium of companies and public sector organizations to build on work already carried out in Intel and create an international standard for the management of IT.

As well as the consortium's commitment of funding and in-kind resources, Enterprise Ireland and IDA Ireland, through the Technology Centre programme, support IVI's research agenda to focus on the creation and accumulation of knowledge and best-available practices in the management of IT.

IVI supports and is supported by an international membership consortium of industry, academia, and public sector organizations who collaborate to deepen their understanding and develop their ability to manage their IT functions and realize the value of IT for their organizations. The consortium currently includes over 100 members, including many of the world's largest and most prestigious enterprises. Collaboration with the consortium members is a key part of IVI's research and development process.

The Origins of IT-CMF™

In 2000, when Intel Corporation embarked on a programme of transformation of its IT function, they found that there was no comprehensive, integrated, CIO-level framework available. Over the following years, they developed a maturity framework approach that proved to be highly successful. That approach, and the lessons learned from their experience of applying it, were captured in Professor Martin Curley's book, *Managing IT for Business Value*. When IVI was established in 2006, the Institute adopted the maturity framework from Intel Corporation, and continued to further develop and refine it. Since then, IVI has substantially enhanced and extended the framework with further research and feedback from users, to make it relevant to IT leaders and professionals in any industry (public or private) who need to manage key IT capabilities to improve agility, innovation, and value.

Acknowledgements

Development of IT-CMF is made possible by the many individuals from organizations spanning industry, government, and academia throughout the world, who donated their time to add richness, relevance, and rigour to the body of knowledge. The Innovation Value Institute (IVI) is grateful to these people and their organizations.

Contents

A. INTRODUCTION

The Management of IT Challenge	3
What Is IT-CMF?	3
Core Concepts of IT-CMF	5
The Architecture of IT-CMF	8
The Capability Improvement Programme (CIP)	13
About the Body of Knowledge Guide	19

B. OVERVIEW OF IT-CMF CRITICAL CAPABILITIES

Managing IT like a Business

01 Accounting and Allocation (AA)	23
02 Business Planning (BP)	27
03 Business Process Management (BPM)	31
04 Capacity Forecasting and Planning (CFP)	35
05 Demand and Supply Management (DSM)	39
06 Enterprise Information Management (EIM)	43
07 Green IT (GIT)	49
08 Innovation Management (IM)	53
09 IT Leadership and Governance (ITG)	59
10 Organization Design and Planning (ODP)	63
11 Risk Management (RM)	67
12 Service Analytics and Intelligence (SAI)	71
13 Sourcing (SRC)	75
14 Strategic Planning (SP)	81

Managing the IT Budget

15 Budget Management (BGM)	87
16 Budget Oversight and Performance Analysis (BOP)	91
17 Funding and Financing (FF)	95
18 Portfolio Planning and Prioritization (PPP)	99

Managing the IT Capability

19	Capability Assessment Management (CAM)	105
20	Enterprise Architecture Management (EAM)	109
21	Information Security Management (ISM)	113
22	Knowledge Asset Management (KAM)	119
23	People Asset Management (PAM)	123
24	Personal Data Protection (PDP)	127
25	Programme and Project Management (PPM)	131
26	Relationship Management (REM)	135
27	Research, Development and Engineering (RDE)	141
28	Service Provisioning (SRP)	145
29	Solutions Delivery (SD)	149
30	Supplier Management (SUM)	153
31	Technical Infrastructure Management (TIM)	157
32	User Experience Design (UED)	163
33	User Training Management (UTM)	167

Managing IT for Business Value

34	Benefits Assessment and Realization (BAR)	173
35	Portfolio Management (PM)	177
36	Total Cost of Ownership (TCO)	181

C. GOING FORWARD WITH IT-CMF

	Next Steps	187
--	------------	-----

D. APPENDICES

1	IVI Assessments	193
2	IVI Training Programmes	197
3	Capability Performance Indicators	199
4	Sample Artefacts	229

A. Introduction

The Management of IT Challenge

The rapid developments in information technology (IT) present a challenge for people working in all organizations – large and small, public and private. IT-enabled change and innovation are increasingly critical for organizations' continued viability, but many people struggle to use IT effectively in ways that optimize its value across organizations.

In short, there is a lack of tools and resources to manage *how* organizations can get the best out of IT. As many as half of all large-scale technology deployments risk failure – not because they don't provide imaginative solutions to real-world issues or because they lack inherent value, but rather because they are deployed without an appropriate IT management structure. And with estimated annual worldwide IT spending at around US\$2 trillion, such failures represent a very significant financial loss, not to speak of the lost opportunities to deliver value and innovation.

Organizations must deploy and use IT effectively to remain relevant in an increasingly digital economy, and they must continually innovate and differentiate themselves to keep pace and gain competitive advantage, particularly in the face of the transformation that is arriving with SMACIT (Social, Mobile, Analytics, Cloud and the Internet of Things). IT on its own does not create business success – only an effective IT capability that delivers a steady stream of IT-enabled changes and innovations can provide sustainable competitive advantage.

What Is IT-CMF?

IT-CMF is an integrated management framework and set of tools for designing, deploying, and operating information systems to deliver sustainable business value and innovation.

It incorporates a comprehensive body of knowledge that covers thirty-six critical IT management capabilities that enable practitioners to measure the *maturity* of different levels of management efficiency and effectiveness. It also has a portfolio of certified training and accreditation, tools and templates, and a comprehensive Capability Improvement Programme that enables practitioners to professionalize their entire approach to IT management.

IT-CMF is explicitly designed to cover the full range of IT capabilities that are required to deliver agility, innovation, and value for the organization. And it is also flexibly designed to allow new capabilities to be captured, represented, and integrated as they emerge.

Organizations that are good at managing their IT capabilities perform better as businesses, but many organizations struggle to manage their IT capabilities in a coherent, systematic, or focused way. One of the fundamental values of IT-CMF is that it enables decision-makers

to identify and develop the particular IT capabilities they need in order to deliver agility, innovation, and value to their organization.

The Unique and Comprehensive Scope of IT-CMF

Of course, there are other IT management tools that cover individual domains, that specialize in particular niche areas, or that focus on certain known IT management deficits. The fact that there are so many tools, however, makes it even more difficult for organizations to choose the ones that are appropriate to their needs and then to integrate them effectively. IT-CMF, by contrast, offers comprehensive coverage of the full range of defined IT-related capabilities, and is flexible enough to accommodate new capabilities as they emerge. It also has the very considerable advantage of offering a clear and common language for defining levels of maturity and for identifying ways in which deficits might be addressed.

IT-CMF aims for comprehensive coverage of the components (*Critical Capabilities*) needed by those responsible for managing the IT function in an organization. It leverages the concept of dynamic capabilities that can be reconfigured as required to meet changing circumstances and strategies. It provides a portfolio of options from which IT leaders and professionals can design an improvement programme that is uniquely suited to their particular IT capability needs and their business environment.

IT-CMF builds on the maturity model conceptualization adopted by the Software Engineering Institute for the Software CMM model, but as well as focusing on process and capability maturity, IT-CMF also focuses on outcome maturity – that is, on the specific business outcomes expected at different levels of capability maturity.

The Innovation Value Institute™

IT-CMF was developed by the Innovation Value Institute (IVI), a not-for-profit, multidisciplinary research and education institute established in 2006. The Institute was co-founded by Intel Corporation and Maynooth University with the objective of creating an international consortium of companies and public sector organizations to build on work already carried out in Intel and create an international standard for the management of IT.

As well as the consortium's commitment of funding and in-kind resources, Enterprise Ireland and IDA Ireland, through the Technology Centre programme, support IVI's research agenda with its focus on the creation and accumulation of knowledge and best-available practices in the management of IT.

The consortium currently includes over 100 members, including many of the world's largest and most prestigious enterprises. Collaboration with the consortium members is a key part of IVI's research and development process (Open Innovation 2.0).

What IT-CMF Provides

IT-CMF provides the basis for systematically and continually improving the performance of the IT function in an organization, and for measuring progress and value delivered. It enables organizations to devise more robust strategies, make better-informed decisions, and consistently deliver increased levels of agility, innovation, and value.

IT-CMF offers:

- ▶ A holistic business-led approach that enables performance across the IT function to be managed consistently and comprehensively.
- ▶ Support for the development of enduring IT capabilities with a primary focus on achieving business agility, innovation, and value.
- ▶ A platform and a common language for exchanging information between diverse stakeholders, enabling them to set goals, take action, and evaluate improvements.
- ▶ An umbrella framework that complements other frameworks already in use in the organization to drive cohesive performance improvement.

IT-CMF is currently used by hundreds of organizations worldwide, and is fast becoming the de facto standard for the management of IT in large organizations.

Core Concepts of IT-CMF

This section outlines the core principles and philosophy underpinning IT-CMF. A good understanding of these concepts will help the reader to derive optimum benefit from the remaining chapters of this book, and to see how IT-CMF improves management of IT for better agility, innovation, and value.

What is a Capability?

A capability is the *quality of being capable*, to have the capacity or ability to do something, to achieve pre-determined goals and objectives. Collectively, capabilities coordinate the activities of individuals and groups – linking individual actions into seamless chains of actions, leading to repeatable patterns of interaction that become more efficient and effective as they are practised and internalized. An organizational capability refers to an organization's ability to *'perform a set of co-ordinated tasks, utilizing organizational resources, for the purposes of achieving a particular end result'* [1].

Capabilities must work in a consistent manner. Having a capability means that the organization can perform an activity repeatedly and reliably. Organizations build their capabilities progressively in a cyclical process of trial, feedback, learning, and evolution. Organizations must be able to realign their resources in response to changes in strategy or the environment in which they operate. They must be able to embrace change, quickly

innovating and reconfiguring resources to capture and exploit new, unforeseen opportunities. This is often referred to as having ‘dynamic’ capabilities. IT-CMF facilitates this flexibility and responsiveness, and enables an organization to purposefully create, extend, or modify its resource base to address rapidly changing circumstances [2].

Dynamic capabilities include the ability to search, explore, acquire, assimilate, and apply knowledge about resources and opportunities, and about how resources can be configured to exploit opportunities. Organizations with such capabilities have greater intensity of organizational learning, and are able to leverage feedback cycles more effectively, and thereby continually build stronger capabilities.

IT Capabilities

An organization’s ability to orchestrate IT-based resources to create desired outcomes is a product of its IT capabilities. In IT-CMF, an IT capability is *the ability to mobilize and deploy (that is, integrate, reconfigure, acquire, and release) IT-based resources to effect a desired end, often in combination with other resources and capabilities* (adapted [3]). Resources, in this context, can be either tangible (including financial, physical/infrastructural, human) or intangible (including software, data, intellectual property, branding, culture).

Relationships between Capabilities, Competences, and Processes

Business processes are sequences of actions that organizations engage in to accomplish specific tasks. They represent how an organization’s resources are exploited, and can be thought of as the routines or activities that an organization develops to get something done [4][5]. Business processes require the competences (knowledge, skills, and experience) of individual employees and groups for their effective execution. In turn, business processes help individual employees and groups develop competence in particular ways of working [6]. Processes and competences are thus mutually dependent and reinforcing.

Effective and efficient processes are critical for business operations, but they must be regularly evaluated and where necessary modified to ensure that they continue to meet the organization’s ongoing requirements and to deliver sustainable business value. Capability management provides the vital link between the business’s strategy and environment and its business processes. It gives the organization *the ability to create patterns of learning and adjustment and to establish and maintain synergetic relationships between competences (people), processes (routines), and resources (assets) to accomplish a desired end.*

Business Value

The term ‘business value’ is commonly used to refer to the overall health of an organization, and includes both economic value and other forms that cannot always be measured in monetary terms. IT-CMF reflects a narrower focus on the concept and defines business value from its perspective as *the contribution that IT-based resources and capabilities make to helping an organization achieve its objectives* [7]. Those objectives may be internal or

external to the IT function. IT's greatest potential, however, lies in business enablement across the wider organization – that is, the organization's IT capability plays an important role in developing other business capabilities [3]. In having an effective IT capability, the organization is enabled to strategically mobilize and deploy (integrate, reconfigure, acquire, and release) its various resources to achieve specific goals and objectives, often in combination with other capabilities and resources, and it is only through this process that business value is delivered. As outlined above, resources in this context can include, for example, financial, physical/infrastructural, human, data, intellectual property, branding, and culture, and depending on the organization's context, these resources will likely be coordinated and integrated in different ways. Hence, while all organizations have an IT capability, the resource configurations that underpin this capability will differ, thereby determining whether the organization's IT capability is weak or strong [8]. IT-CMF helps organizations to continually enhance their capabilities to ensure that the underpinning resource (re)configurations are always aligned in support of business strategy and in response to environmental forces.

Maturity

Maturity frameworks are conceptual models that outline anticipated, typical, logical, and desired evolution paths towards desired end-states [9], where maturity is an evolutionary progress in the demonstration of a specific ability or in the accomplishment of a target [10]. Maturity-based approaches for managing IT have been widely adopted – for example, the Software Engineering Institute's (SEI) Capability Maturity Model Integration (CMMI) is extensively used in the domain of software quality [11][12].

For each of the capabilities in the framework, IT-CMF defines five maturity levels, each of which identifies a different level of efficiency and effectiveness. This facilitates a modular, systematic, and incremental approach to capability improvement, by helping organizations to gauge how advanced they are in each area of activity, and identifying the actions they can take to improve over time.

While the definition of maturity levels is specific to each capability, the broad common characteristics of the five maturity levels, in terms of approaches, scope, and outcomes, are as shown in Table 1.

Maturity levels are additive in that each lower level provides the foundation for the next level, and capabilities are progressively enhanced from one level to the next. It can thus be unwise (and may not be possible) to skip levels – for example, to attempt to progress from level 1 directly to level 5. With proper planning, however, progress through the levels can be accelerated.

TABLE 1: GENERAL MATURITY LEVEL HEURISTICS

Level	Approaches Quality of routines / practices or activities	Scope Breadth of coverage / focus	Outcomes Predictability between actions and consequences
1 – Initial	Approaches are inadequate and unstable.	Scope is fragmented and incoherent.	Repeatable outcomes are rare.
2 – Basic	Approaches are defined, but inconsistencies remain.	Scope is limited to a partial area of a business function or domain area; deficiencies remain.	Repeatable outcomes are achieved occasionally.
3 – Intermediate	Approaches are standardized, inconsistencies are addressed.	Scope expands to cover a business function (typically IT) or domain area.	Repeatable outcomes are often achieved.
4 – Advanced	Approaches can systematically flex for innovative adaptations.	Scope covers the end-to-end organization / neighbouring domain areas.	Repeatable outcomes are very often achieved.
5 – Optimizing	Approaches demonstrate world-class attributes.	Scope extends beyond the borders of the organization / neighbouring domains.	Repeatable outcomes are virtually always achieved.

The Architecture of IT-CMF

IT-CMF is structured, at the highest level, around four *Macro-Capabilities*, each of which embraces a number of *Critical Capabilities* that can contribute to agility, innovation, and value. Each Critical Capability in turn is made up of a number of *Capability Building Blocks*.

4 Macro-Capabilities

↳ 36 Critical Capabilities

↳ 315 Capability Building Blocks

IT-CMF defines the different *maturity levels* for each Capability Building Block, and provides *evaluation questions* to assess their current ‘as is’ state. For each Capability Building Block, IT-CMF provides a series of representative practices to drive maturity, along with the outcomes that can be expected from implementing them, and the metrics that can be applied to monitor progress (*Practices-Outcomes-Metrics*, or *POMs*).

The framework also looks at typical *challenges* that the organization might face in attempting to develop maturity in each capability, and suggests *actions to overcome* them. And it identifies additional *management artefacts* and *capability performance indicators (CPIs)* that can be used in progressing towards a target 'to be' maturity state.

Macro-Capabilities

At the highest level, IT-CMF is structured around four key strategic areas, or Macro-Capabilities, for the management of IT:

1. Managing IT like a business.
2. Managing the IT budget.
3. Managing the IT capability.
4. Managing IT for business value.

The effective management of technology within an organization focuses on these four Macro-Capabilities, all of which should be aligned with the overall business strategy, the business environment within which the organization operates, and the IT posture of the organization – i.e. the organization's attitude towards the use of IT.

1. Managing IT like a Business

To optimize the contribution of technology to the organization as a whole, the IT function needs to be managed using professional business practices. This involves shifting the focus away from technology as an end in itself towards the customers and the business problems to which IT can provide solutions. The **Managing IT Like a Business** Macro-Capability provides a structure within which the IT function can be repositioned from a cost centre to a value centre.

2. Managing the IT Budget

There are many challenges associated with managing the IT budget, including, for example, unplanned cost escalation, the cost of maintaining legacy systems, and management reluctance to invest strategically in new technologies. The **Managing the IT Budget** Macro-Capability looks at the practices and tools that can be used to establish and control a sustainable economic funding model for IT services and solutions.

3. Managing the IT Capability

The IT function was traditionally seen as the provider of one-off IT services and solutions. In order to fulfil its role as the instigator of innovation and continual business improvement however, the IT function has to proactively deliver – and be seen to deliver – a stream of new and improved IT services and solutions. The **Managing the IT Capability** Macro-Capability provides a systematic approach to adopting that role, by effectively and efficiently maintaining existing services and solutions and developing new ones.

4. Managing IT for Business Value

Investments in IT must be linked to overall business benefits. This means that the investments should not be viewed simply as technology projects, but as projects that generate business value and innovation across the organization. The **Managing IT for Business Value** Macro-Capability provides a structure within which the IT function provides the rationale for investment in IT and measures the business benefits accruing from it.

Together these four Macro-Capabilities operate in a continuous feedback loop to optimize the way in which IT is managed.

- ▶ *Managing IT like a Business* sets the direction for the overall IT capability.
- ▶ In *Managing the IT Budget*, the strategic direction is translated into an IT budget to fuel activities and programmes.
- ▶ *Managing the IT Capability* is the production engine, where two primary activities are performed: maintaining existing IT solutions and services, and developing new IT solutions and services.
- ▶ *Managing IT for Business Value* ensures that these activities and programmes deliver value.

Performance is fed back into *Managing IT like a Business*, to validate that the IT budget is being converted effectively into business value. This may result in tactical or strategic adjustments that feed through the cycle again [13] (See Figure 1).

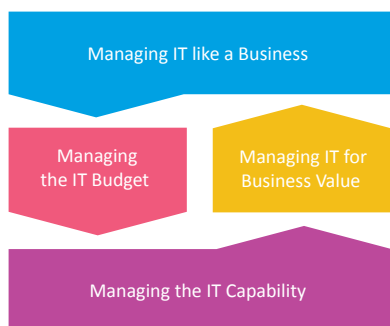


FIGURE 1: IT-CMF'S MACRO-CAPABILITIES

The Macro-Capability feedback loop in IT-CMF ensures that the organization continually focuses on the IT capabilities needed to meet the challenges and opportunities presented by the changing business and operating environment. When an organization is planning its capability improvement programme, it is helpful to decide on its strategic objectives in relation to each of the four Macro-Capabilities of IT-CMF, as depicted in Figure 2. This will help to identify the Critical Capabilities that the organization needs to focus on. Other factors that must be taken into account include IT posture, problem context, industry trends, business strategy, business context, and so on.

Critical Capabilities

IT-CMF's four Macro-Capabilities encompass a modular library of 36 Critical Capabilities (See Figure 3). Critical Capabilities are key management domains that need to be considered by an organization when planning and delivering IT-enabled agility, value, and innovation. For each Critical Capability, there are five progressive levels of maturity that describe the state of completeness of an organization's ability to achieve a desired end state or outcome.

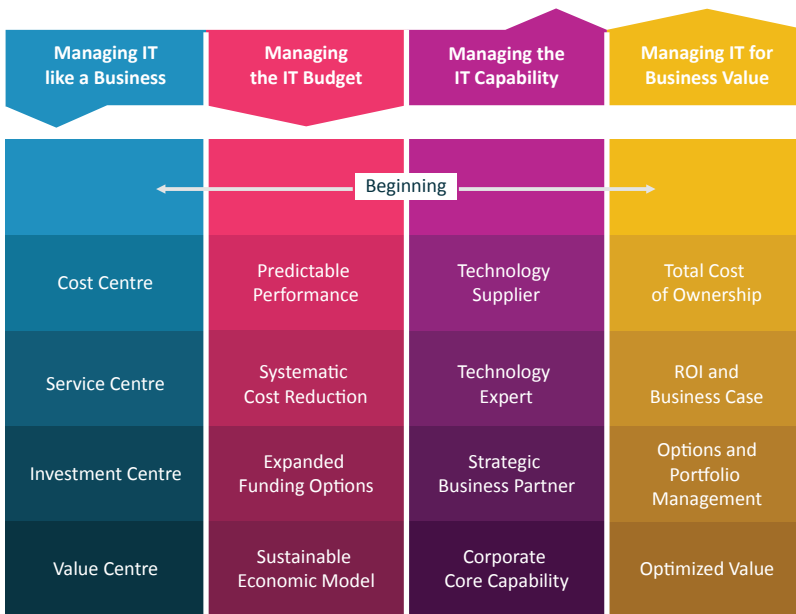


FIGURE 2: MAJOR STRATEGIES OF IT-CMF'S MACRO-CAPABILITIES

Capability Building Blocks

Capability Building Blocks are the key components of a Critical Capability that enable its goals and objectives to be achieved efficiently and effectively. These are grouped into higher-order logical categories that are particular to each capability. As with Critical Capabilities, there are five progressive levels of maturity for each Capability Building Block.

Additional Capability Components

As well as the three major architectural elements of IT-CMF discussed above and in the following chapters, there are additional capability elements that can help practitioners leverage the full value of the framework. The Capability Maturity Evaluations/Assessments, Practices-Outcomes-Metrics (POMs), and Management Artefacts are outlined in detail in *IT Capability Maturity Framework: The Body of Knowledge Guide* (2nd edition, 2016). A list of all Capability Performance Indicators (CPIs) is included in Appendix 3.

Capability Maturity Evaluations/Assessments

For each Critical Capability, there is a capability evaluation that is designed to help IT leaders and professionals to determine their organization's current and desired maturity levels in relation to the Critical Capability and its underlying Capability Building Blocks. Each question has associated with it a series of corresponding maturity statements from which the organization selects the one that most closely matches their situation based on survey participants' aggregate responses. These questions and answers can inform improvement planning discussions and help drive improvement across the areas under investigation.



FIGURE 3: IT-CMF'S MACRO-CAPABILITIES AND CRITICAL CAPABILITIES

Practices- Outcomes- Metrics (POMs)	<p>For each Critical Capability, representative <i>practices</i> to help stabilize the organization's current maturity or progress to the next level of maturity are described at each maturity level. Each practice is accompanied by an <i>outcome</i> that states what benefits might result from following the practice, and one or more <i>metrics</i> against which the organization can gauge whether or not it has been successful in its efforts. The practices listed are indicative or representative, and are not exhaustive or mandatory – depending on organizational circumstances, alternative practices may yield the same results.</p> <p>IT leaders and professionals choose the POMs that are most appropriate to their organization's maturity circumstances and on which they can expend time, resources, and effort to best effect.</p> <p>As with maturity levels, POMs are cumulative, in that lower-level POMs provide the foundation for adopting and succeeding with higher-level POMs.</p>
Capability Performance Indicators (CPIs)	<p>Capability Performance Indicators (CPIs) are those business and operational performance indicators that relate directly to a specific Critical Capability. CPIs are designed to help to make connections between business goals, capability improvement targets, and business outcomes. These are used to help IT leaders and professionals to better understand their organization's progress in relation to expected process outcomes, and to complement day-to-day monitoring, control, and actions.</p> <p>The CPIs are grouped into the balanced scorecard segments (financial, process, customer, learning and growth) in order to provide a more holistic view of the target capability improvement. Individuals and teams select a small number of CPIs that are relevant to their improvement priorities.</p> <p>A list of all CPIs is included in Appendix 3. Licensed users of IT-CMF can access the full details of all CPIs online via the IVI Digital Platform. CPIs are not included in <i>IT Capability Maturity Framework: The Body of Knowledge Guide</i> (2nd edition, 2016).</p>
Management Artefacts	<p>These are artefacts that management might use to develop maturity in Critical Capabilities. They include a range of templates, documents, software applications, and other tools that have the potential to help IT leaders and professionals develop their organization's capability.</p>

The Capability Improvement Programme (CIP)

The Capability Improvement Programme (CIP) is a change methodology and set of tools developed by IVI to support organizations who are implementing IT-CMF. Working with IVI, organizations can use the CIP to identify the Critical Capabilities that deliver the highest value to the business, and then to plan for structured improvement focused on their day-to-day operations.

Each organization undertaking a CIP will have a different business and operational context, and the nature, focus, and level of improvement that they seek will be different. The sophistication and comprehensiveness of IT-CMF accommodates different starting positions and enables organizations to leverage different aspects of the framework.

Who is CIP for?

There are two key types of user who engage in an IT-CMF CIP:

- ▶ **Practitioners** are those who play a leadership or key facilitating role in addressing the business issue through capability improvement. These include IT leaders and professionals – programme leaders, improvement team leaders, key subject matter experts, and IT-CMF assessors.
- ▶ **Participants** are those who need to understand the context of the CIP and who participate in activities and tasks related to CIP. They also include senior management and sponsors of CIP.

Training is available in both online e-learning format and class-based format (See Appendix 2 for a list of available training programmes). Formal IVI examinations and certification are available as an option, and many organizations and individuals include certification in support of their quality programmes and career and professional development.

The Four Phases of a CIP

The CIP has four phases, each of which has clearly identified activities, tasks, deliverables, outcomes, and supporting templates directed at the achievement of capability and business goals. Figure 4 presents an overview of the CIP.

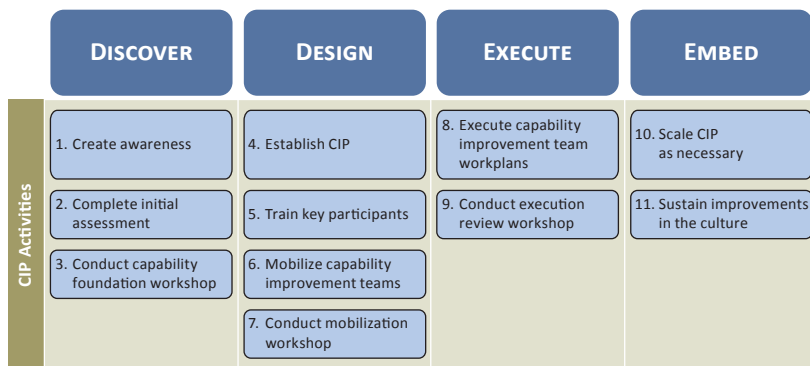


FIGURE 4: OVERVIEW OF CIP

CIP Phase 1: Discover

The first phase of a CIP is one of discovery that involves the leadership team in an organization agreeing on the business outcomes it expects to achieve with the CIP. This phase includes an ‘initial assessment’ that is chosen from the list of available formal assessments provided by IVI (See Appendix 1 for a list of available formal assessments) and that is appropriate to the organization’s context and CIP aims.

Organizations that wish to start at a higher level and engage both business and IT professionals to create an initial CIP charter may use the rapid ‘accelerator assessment’ to help them review their current practices across a range of ten key business issues. And from there, they can define value propositions and identify the priority IT-CMF Critical Capabilities that might support them.

The ‘accelerator assessment’ is designed to be highly accessible to business professionals who are not necessarily technical experts, and for that reason it is organized around management issues rather than by the components of IT-CMF.

Figure 5 shows the key activities, tasks, and deliverables/outcomes for the Discover phase.

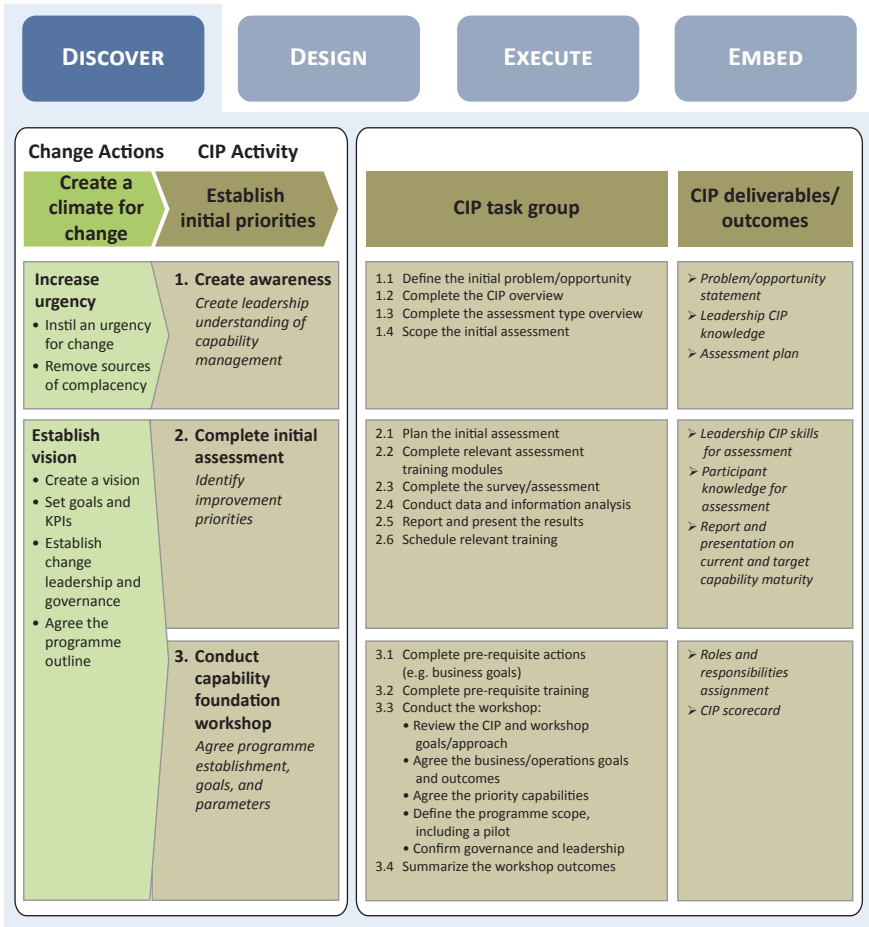


FIGURE 5: OVERVIEW OF THE CIP DISCOVER PHASE

CIP Phase 2: Design

The Design phase provides clear direction for the planning, training, and mobilization activities required to implement the outcomes formulated in the Discover phase. IVI provides a suite of tools and modules to train all participants, and this phase broadens the involvement from the CIP leadership team to include key improvement team leaders, subject matter experts, and other members of the capability improvement team.

Figure 6 shows the key activities, tasks, and deliverables/outcomes for the Design phase.

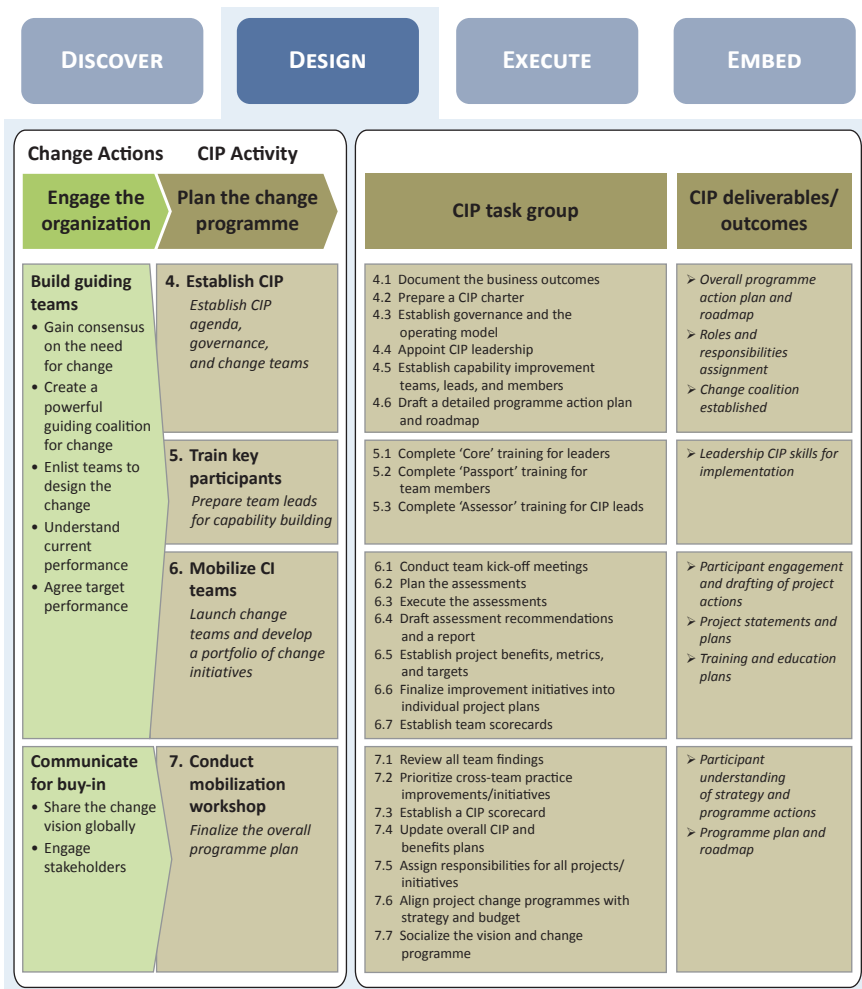


FIGURE 6: OVERVIEW OF THE CIP DESIGN PHASE

CIP Phase 3: Execute

The purpose of the Execute phase is to support the organization in the implementation of its improvement plan. This is the phase in which the capability improvement team builds and improves the capabilities that matter to the organization – with guidance and support from IVI and subject matter experts. The Discover and Design phases are about establishing what are the right things to do; the Execute phase concentrates on doing the right things in the right way at the right time.

Figure 7 shows the key activities, tasks, and deliverables/outcomes for the Execute phase.

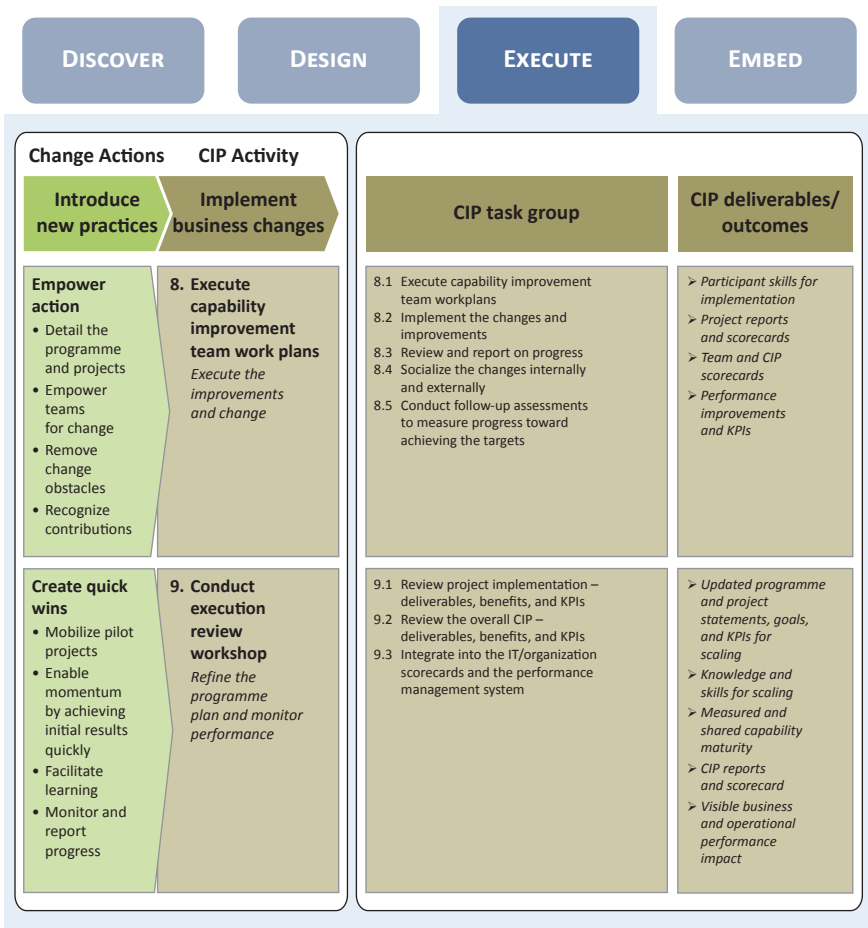


FIGURE 7: OVERVIEW OF THE CIP EXECUTE PHASE