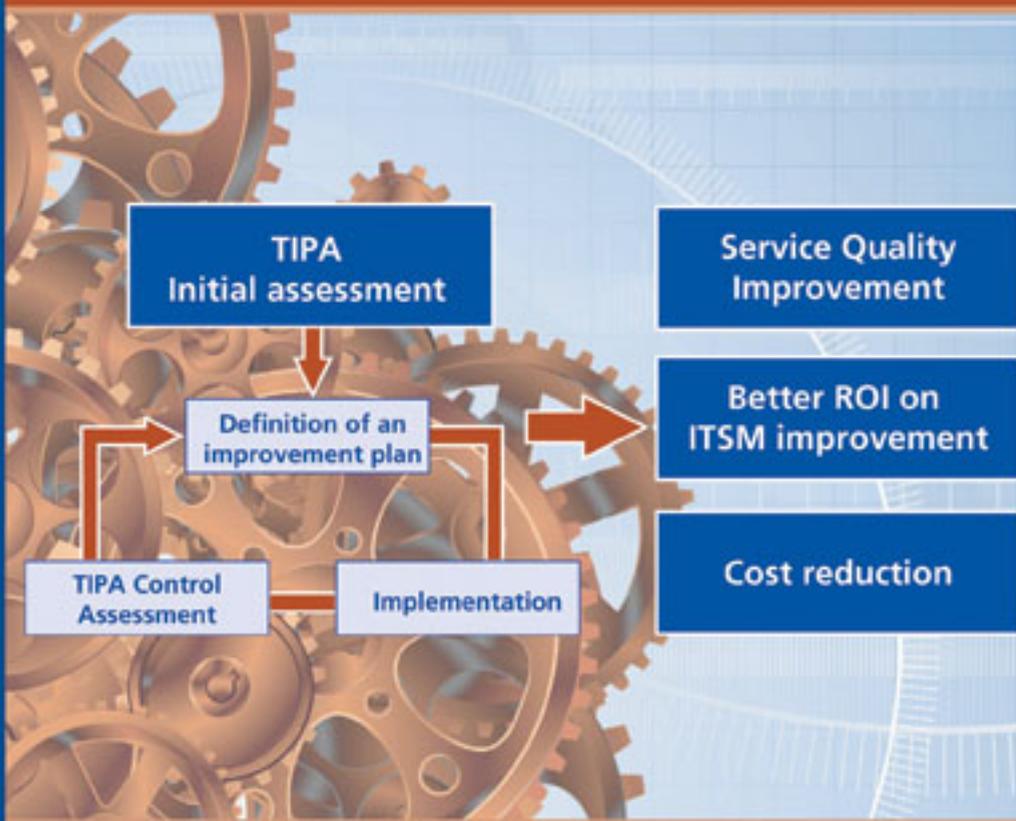




ITSM Process Assessment Supporting ITIL®



Using TIPA to Assess and Improve your Processes with
ISO 15504 and Prepare for ISO 20000 Certification

ITSM Process Assessment Supporting ITIL®

Other publications by Van Haren Publishing

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

- IT management,
- Architecture (Enterprise and IT),
- Business management and
- Project management

VHP is also publisher on behalf of leading companies and institutions:

The Open Group, IPMA-NL, PMI-NL, CA, Getronics, Quint, ITSqc, LLC, The Sox Institute and ASL BiSL Foundation

Topics are (per domain):

IT (Service) Management / IT Governance

ASL
BiSL
CATS
CMMI
COBIT
ISO 17799
ISO 27001
ISO 27002
ISO/IEC 20000
ISPL
IT Service CMM
ITIL® V2
ITIL® V3
ITSM
MOF
MSF
ABC of ICT

Architecture (Enterprise and IT)

Archimate®
GEA®
TOGAF™

Business Management

EFQM
ISA-95
ISO 9000
ISO 9001:2000
SixSigma
SOX
SqEME®
eSCM

Project/Programme/ Risk Management

A4-Projectmanagement
ICB / NCB
MINCE®
M_o_R®
MSP™
PMBOK® Guide
PRINCE2™

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

ITSM Process Assessment Supporting ITIL®

**Using TIPA to Assess and Improve your
Processes with ISO 15504 and Prepare
for ISO 20000 Certification**



Colophon

Title:	ITSM Process Assessment Supporting ITIL®
Subtitle:	Using TIPA to Assess and Improve your Processes with ISO 15504 and Prepare for ISO 20000 Certification
Series:	Best Practice
Authors:	Public Research Centre Henri Tudor: Béatrix Barafort, Valérie Betry, Stéphane Cortina, Michel Picard, Marc St-Jean, Alain Renault, and Omar Valdés
Text editor:	Jane Chittenden
Publisher:	Van Haren Publishing, Zaltbommel, www.vanharen.net
ISBN:	978 90 8753 564 3
Copyright:	© Public Research Centre Henri Tudor
Print:	First edition, first impression, December 2009
Layout and type setting:	CO2 Premedia, Amersfoort – NL
Printer:	Wilco, Amersfoort – NL

For any further enquiries about Van Haren Publishing, please send an e-mail to info@vanharen.net.

Although this publication has been composed with most care, neither Author nor Editor nor Publisher can accept any liability for damage caused by possible errors and/or incompleteness in this publication.

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.

Foreword

As president of itSMF.lu, the Luxembourg chapter of itSMF, I am proud to present the TIPA methodology developed by the Public Research Centre Henri Tudor in Luxembourg. Based on ITIL Best Practices and the ISO/IEC 15504 framework, TIPA was conceived to assess ITSM processes in IT organizations of any size.

The most important success factor for an assessment is to introduce the goals and objectives of the assessment, adding on top of that the expected deliverables and the timeframe. Anyone involved in the assessment will therefore understand how and why he/she is involved. This point of view is also related to one of the outcomes of the assessment: the improvement plans (short, mid, and long term plans) that are down-to-earth and really relevant to the situation and company.

In any company, being process oriented and sensitive to quality is a key success factor. Being process oriented means that any standard or norm can be used as a framework. However, there are so many of them that it is often hard to select one. Because of this difficulty some companies prefer to develop their own framework which is also a valid solution. Therefore, being process oriented and quality driven is a key step for success and performing assessments and/or audits, in order to make sure that the organization sticks to the chosen framework, becomes normal, even necessary.

Assessing processes is an investment for the future that allows to improve the quality delivered and to reduce the costs of delivery. You can also benchmark the processes against other companies, identify opportunities to improve, and measure that improvement. The ISO/IEC 15504 structure (base practices, attributes, and generic practice indicators) helps to go into very precise details and leads to an extraordinary granularity of questions.

The relationships between maturity of process and workload of an audit have been identified. The more mature you are, the easier your audit will be. Therefore, assessments and audits could be best friends helping each other to achieve their goals!

The itSMF chapter in Luxembourg is supporting TIPA's methodology and actively participated to its creation and evolution. We are convinced that using the ITIL Framework Best Practices, structuring the processes according to the ISO/IEC 15504 standard, and making the TIPA process models available is an added value to the market.

We hope that most companies will understand what TIPA can bring them, supporting their efforts to improve their IT service management processes, and to meet the requirements of the ISO/IEC 20000-1, whose importance cannot be neglected nor denied.

Sylvie Prime
President of ItSMF Luxembourg
Grand Duchy of Luxembourg

Foreword

When we started on the evolution of our international standard for process assessment (ISO/IEC 15504) back in 1992, there was no question that our domain of interest was software engineering; even the title of the Standard proclaimed this – Software Process Assessment; while the project we established to develop and validate the Standard was likewise concerned with Software Process Improvement and Capability dEtermination (SPICE). The original Study Group report that resulted in the commencement of development for the Standard was unequivocal: *“The goal of the proposed standard for process assessment is to improve the quality of software world-wide.”*

The reasons for this were rooted in the evolution of software engineering as a discipline. While the techniques employed in process assessment derive from the classic background of total quality management and the Plan – Do – Check – Act cycle, their assembly into a coherent approach matured through integration with the concepts of “quality maturity” developed by Crosby. The landmark work of Humphrey further advanced the concepts of assessment, providing a clear link between the evaluation of Organizational Maturity and the capability of the key processes supporting effective management of software engineering.

The genesis of Humphrey’s work was a concern by the US Department of Defense to enhance the capability of contractors on software intensive projects. The approach provided a clear quantitative result – the Maturity Level – and the use of this result as a key factor in contract selection was inevitable. This also led to an increased focus on the formality of the assessment process, and the need for integrity in the measurement framework, and these factors were key drivers in the initial development of the first version of ISO/IEC 15504 – the “Technical Report”. Throughout, however, the focus was on software engineering; the title of the TR was “Software process assessment”.

It did not take long, however, before the scope of application of process assessment was extended beyond this limited scope. Initially the concept was extended more generally to cover systems engineering as a whole; the SEI’s Systems Engineering CMM was the first to achieve this. Within the SPICE community, we became aware of a variety of novel applications of our assessment approach, ranging from improvement for foundry operations, through the improvement of research productivity to the application for evaluating the effectiveness of gas distribution processes! Accordingly, when ISO/IEC 15504 was released as a full International Standard, the title was simplified to “Process assessment”, and the framework was simplified to readily enable application to broader areas of scope.

Given this history, and the proven success of the ITIL approach to managing IT Service Management, it is a pleasure for us to be able to welcome the development of TIPA, a framework for assessment of IT Service Management processes. The framework described in this Handbook is comprehensive; it covers not only the method for performing assessment, but also the requirements for training and qualification of assessors.

The framework supports the implementation of processes described in ITIL and ISO/IEC 20000, and provides an approach for evaluating their effectiveness. It offers the prospect of developing meaningful benchmarks of performance enabling cross-industry comparisons and a firm baseline for improvement in service management. We welcome it as a comprehensive package consistent with and supportive of the aims of the international Standard.

Terry Rout
Software Quality Institute
Griffith University
Australia

Alec Dorling
InterSPICE Ltd.
UK.

About the authors

The Public Research Centre Henri Tudor is the largest public research centre in the Grand Duchy of Luxembourg. Its main research activities are focused on five domains:

- Information and Communication Technologies (ICT)
- Materials technologies
- Business organization and management
- Environmental technologies
- Health care technologies

IT Service Management and the Process Assessment domains have been studied at the Public Research Centre Henri Tudor since the mid nineties. More specifically, the research unit called “Engineering and Management for ICT Processes and Services” (EMAPS) has conducted several projects concerning process assessment and improvement in the fields of software development and service management. These projects have led to important contributions to the ISO/IEC 15504 and the ISO/IEC 20000 standards. The Centre continues to contribute with the evolution of these two standards and follows closely the evolution of ITIL®. TIPA is the result of seven years of research work, including experimentation, since the original idea of combining IT service management with the ISO/IEC 15504 standard in order to produce a coherent ITIL® assessment methodology.

The research & development engineers and specialists of the Public Research Centre Henri Tudor, who contributed to the development of the TIPA methodology and its publication, are Béatrix Barafort, Valérie Betry, Stéphane Cortina, Michel Picard, Marc St-Jean, Alain Renault, and Omar Valdés. They are all involved in the IT service management and process assessment research and innovation being conducted at the Centre. Notably Ms. Barafort is actively involved in standardization activities in ISO JTC1 SC7 dealing with Software and Systems Engineering (particularly for Process Assessment and IT Service Management) and she is editor of the new ISO/IEC 20000 Part 4 for an IT Service Management Process Reference Model; Mr. Picard is actively involved in standardization activities in ISO JTC1 SC7 (particularly for Process Assessment and IT Service Management); finally Mr. Renault is actively involved in standardization activities in ISO JTC1 SC7 (particularly for Process Assessment and IT Service Management) and contributed as an ISO project co-editor for ISO/IEC 20000-5 (Exemplar Implementation Plan for ISO/IEC 20000-1).

The business cases that are part of this book come from the practical experience of Ruddy Hilbert, Business Consultant at Dimension Data, Sylvie Prime, branch manager at Sogeti Luxembourg, and Juhani Jokela and Kimmo Vaikkola, development managers at Fujitsu Services Oy.

Acknowledgements

We would like to express our recognition to all of those who contributed directly or indirectly to the realization of this book. However, there are always some people whose particular dedication and work deserve to be explicitly mentioned:

- *Dr. Eric Dubois*, the director of the IT research department at the CRP Henri Tudor, for his very valuable comments that were of immense help to finalize this work.
- *Ruddy Hilbert* for his contribution to the business case section of this book. He is a business consultant working for Dimension Data in the Benelux area (Belgium and Luxembourg). He has led several assessment projects using TIPPA within Dimension Data Global Service Centers (GSC) all around the world (on the five continents).
- *Sylvie Prime* for contributing one of the business cases on this book. She is Branch Manager at Sogeti Luxembourg and president of itSMF Luxembourg. She regularly conducts assessments at their customers using TIPPA methodology.
- *Juhani Jokela & Kimmo Vaikkola* for allowing us to interview them in order to structure a business case. Juhani Jokela is Development Manager in Project and Application Services unit at Fujitsu Services Oy. He has led about 50 assessments as lead assessor. Kimmo Vaikkola is Development Manager in the Quality and Business Development unit at Fujitsu Services Oy.
- *Ministère de la culture, de l'enseignement supérieur et de la recherche* of the Grand Duchy of Luxembourg for their support that made possible this work.

Contents

- 1 Introduction 1**
 - 1.1 Why reliable IT processes are critically important 1
 - 1.2 Why is it important to assess and improve your IT process? 2
 - 1.3 About this guide 3
 - 1.4 About Tudor IT Service Management Process Assessment (TIPA) 4
 - 1.5 Structure of this guide 4

- 2 Basic concepts: process assessment 7**
 - 2.1 Background 7
 - 2.2 Reference process and models 9
 - 2.3 Process maturity 16
 - 2.4 Assessment of process maturity 25

- 3 TIPA: Assessment of IT Service Management processes 31**
 - 3.1 TIPA interface to standards and best practices 32
 - 3.2 IT Service Management best practices 33
 - 3.3 ISO/IEC 20000 series 38
 - 3.4 Assessment of IT Service Management activities 40
 - 3.5 IT Service Management PAM for assessment 42
 - 3.6 Costs and benefits of a TIPA assessment 47
 - 3.7 TIPA: Framework for IT Service Management assessment 50

- 4 TIPA method step by step 89**
 - 4.1 Introduction 89
 - 4.2 Key success factors 90
 - 4.3 Overview of the phases of a TIPA assessment project 92
 - 4.4 Definition Phase (DEF) 95
 - 4.5 Preparation Phase (PREP) 108
 - 4.6 Assessment Phase (ASMT) 120
 - 4.7 Analysis Phase (ANA) 134
 - 4.8 Results Presentation Phase (RES) 141
 - 4.9 Assessment Closure Phase (CLO) 150
 - 4.10 Starting the improvement cycle 157

- 5 Case studies 161**
 - 5.1 Introduction 161
 - 5.2 Case study 1: Dimension Data 162
 - 5.3 Case study: Sogeti 180
 - 5.4 Case study: Fujitsu Services Oy 192
 - 5.5 Conclusions and lessons learned 199

Glossary.....**201**

 6.1 Acronyms201

 6.2 Definitions202

References**215**

 7.1 TIPA’s related publications215

 7.2 Books215

 7.3 International standards216

 7.4 Other publications217

 7.5 Websites217

1 Introduction

1.1 Why reliable IT processes are critically important

At the height of the financial crisis in September 2008, the London Stock Exchange (LSE) opened for trading on what should have been one of its busiest days on record. As trading volumes soared, the IT system crashed – with no backup system in place. It did not resume service for seven hours.

If this incident illustrates well the importance of a good IT Service Management, it is only one of the numerous examples we could find and though it might be less spectacular, it might not end in the newspapers, a small incident or continuous malpractices might cost your enterprise an even bigger share of its resources. There are very few enterprises nowadays that can be competitive without an excellent IT system. The IT is now almost as important as electricity for most business; it is a vital organ in most organizations.

In the last few decades, IT has become part of our daily life at home, at work, at school, on the road, everywhere. In parallel with this wide adoption, management faced the new challenge of integrating all these technical processes and requirements into their core business. IT Service Management (ITSM) and ITIL® (IT Infrastructure Library) have been at the centre of attention for the last two decades. There has been radical improvement in the field since its early days, but most organizations are still far from mastering their IT processes at the same level as their production processes.

Tudor IT Service Management Process Assessment, called in a more familiar way **TIPA**, is a robust tool for improving IT Service Management either as a first step to help set the goals we want to achieve, to benchmark our progress in an improvement project or as a tool to assess the strength and weakness in the field.

September 7 2008, the American government announces one of the largest bailouts in history with the nationalization of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). In London the stock market is already closed when the bailout is announced. Traders and investors in London wait anxiously for the opening of the London Stock Exchange (LSE) on September 8 2008. At 8 am, when the market opens, the volume soars. It seems it will be the busiest day of the year for the LSE. But at 9:15 am the numbers on traders' screens stop moving. The LSE IT system is down. The City is powerless. Everyone thinks it is due to the surge in volume; everyone is waiting to execute their orders. They wait and wait. Behind the scenes, the IT department is going in crisis mode; all eyes in the financial world are on them. Traders lunch in front of their screen waiting, still waiting. They cannot believe that the LSE does not run in duplication or have a backup system readily available. They will have to wait till 4 o'clock, half an hour before the market closes and about seven hours after the system has gone down, for the market to resume. A few days later, the LSE announced the problems were due to a software problem and not to the high transaction volume, but in any case customers were not impressed by the lack of a backup option and by the time it took to solve the incident.

1.2 Why is it important to assess and improve your IT process?

IT processes are more and more integrated into business processes, the LSE example illustrates that most companies can properly function when there is a problem in IT. Improving IT processes thus provides a support to the core business processes improving the quality of services for users (and at the end of the line for customers) while reducing costs for the company.

It is widely accepted today that most productivity gains in enterprises are linked with the adoption of IT technologies. Mastering IT processes and aligning them with the business processes can have a huge impact on an enterprise. We just have to look at how the adoption of email improved the productivity of employees to understand how much a company can save by aligning (and thus improving) its IT services to users' needs. This is not as easy as it sounds, as customers' needs are in permanent evolution. Yesterday it was email on the desktop for employees; today it is content for everyone anywhere, anytime, on any device. People now expect to be able to buy a pizza from their phone and have it delivered in the next half hour to wherever they are, thanks to the GPS coordinate automatically sent with the order. What will it be tomorrow?

IT is now entrenched in most services and is becoming a differentiation factor in service delivery. Quality of service is not enough any more to differentiate itself from competitors. IT Service Management is a requirement, those not able to offer to quality IT services do not survive very long. Companies like Apple and Google have had a stellar growth in the last decade, because of very innovative product and service delivery built around IT Service Management that give a unique experience to the customers. In contrast, companies like Walmart have made an extensive use of IT to reduce their business cost even if that meant building a satellite network over 20 years ago – though Walmart is not renowned for its unique customer experience it can consistently offer low price because of its IT. This integration of IT everywhere in normal business process requires top quality IT Service Management to insure a seamless experience to customers.

All quality management approaches or standards recommend the continual improvement of products and services offered to customers through periodic assessment of customer satisfaction and of the quality or maturity of the product or service itself, as well as of the processes behind them.

Now the assessment of processes should be part of any improvement project of a company as a tool supporting the Deming cycle (Plan Do Check Act or in short PDCA). The process assessment should be the very first step of any improvement project (Plan), and not only part of the Check step as it can serve to set measurable goals of improvement and help to prioritize them.

It is the IT supplier's challenge to identify these new business opportunities, and work on the development and improvement of their IT infrastructure and services in order to be able to give an adequate answer to the market expectations, or to internal customers' needs.

1.3 About this guide

This book provides a framework to assess IT Service Management processes in a standard, objective and repeatable way. It assumes the reader is already familiar with ITIL, either through training or experience.

The TIPA methodology introduces key concepts of standard process assessment and its application to IT Service Management (ITSM). It explains **how to perform an IT Service Management Process Assessment** in all its steps.

The TIPA framework can be applied with equal success to ITILv2, ITIL v3 or to the ISO/IEC 20000. In this book, we focus on 10 processes from ITIL v2 as illustration throughout the chapters.

You should use this book:

- To prepare the TIPA Foundation and Lead Assessor exam
- To plan, perform or manage an ITIL processes assessment
- As a first step guide to implement ITIL or to initiate an IT Service Management improvement plan
- To understand the pros and cons of TIPA and evaluate how it can help an organization

This book will teach you:

- The concepts of process assessment and process maturity
- How to plan and perform a TIPA process assessment
- How to use the TIPA Methodology toolbox
- How to launch an improvement process starting with an assessment project

This manual will also convey valuable information for understanding the roles and differences between: process assessment, traditional conformity assessment, audit and self-assessment suite as proposed by itSMF (IT Service Management Forum). Finally, it is illustrated with real-life case studies, which highlight what should be done and what should be avoided. The reader will thus learn process assessment based on genuine experiences.

1.4 About Tudor IT Service Management Process Assessment (TIPA)



Figure 1.1 The TIPA framework

In brief, TIPA is the meeting between two standards:

- ITIL: the de facto standard in IT Service Management widely adopted around the world; our first model was based on ITIL v2 but TIPA can also be used for assessing ITIL v3 and the ISO/IEC 20000 (IT Service Management standard) processes.
- ISO/IEC 15504 Information technology - Process assessment: An international standard in process assessment mostly known in software process improvement, but applicable to any process in any field of activity. This standard, still in development, will gain momentum in the next couple of years with the integration of an assessment model (grid) for the ISO 20000.

Thus TIPA's assessment framework meets the requirements of the international standard ISO/IEC 15504 *Process Assessment*. TIPA applies this generic assessment framework to ITIL processes as defined in the Service Delivery and Service Support modules. TIPA's purpose is to determine to what extent those service management processes are in place in an organization, and to measure their maturity levels.

Today, the TIPA framework is already used by several early adopters from the private sector. Some have contributed to this book in order to illustrate the possible uses of the TIPA framework as well as to share their feedback about its effectiveness and usefulness.

1.5 Structure of this guide

The first chapter (this chapter) outlines the critical importance of reliable IT service processes and summarizes the work of the CRP Henri Tudor in developing the TIPA framework for IT Service Management process assessment.

The second chapter introduces basic concepts relating to process assessment by setting out the fundamentals of process approach, rating scale and process maturity. This chapter also describes how a process assessment is performed to lead to a process improvement project.

The third chapter, after presenting the IT Service Management field, and particularly ITIL, describes how the TIPA methodology has used the principles presented in Chapter 2 for carrying out IT Service Management process assessment. It also contains an outline of existing IT Service Management assessment methods and the costs and benefits of TIPA's methodology. Finally,

this chapter presents in detail the Tudor IT Service Management Process Assessment framework (TIPA).

The fourth chapter of this book details, step by step, the practical aspects of TIPA's methodology. It defines the roles involved, the key success factors and the different phases of an assessment project. This chapter also presents activities to be performed and the documents in TIPA's toolbox that support each phase of a TIPA assessment.

Chapter 5 presents three case studies to illustrate process assessments performed by early adopters using the TIPA methodology.

The appendices contain complementary information: index, glossary of terms and list of acronyms used in this manual. The book ends with a list of domain-related publications, books and standards.

The TIPA toolbox, a set of electronic documents, checklists and templates supporting TIPA assessments can be found online on our website.

For further information, news and events, visit the TIPA website: <http://www.tipa-itsm.lu/>

2 Basic concepts: process assessment

This chapter sets out the key principles on which the TIPA methodology has been designed and developed. These comprise the process description, process maturity and process assessment concepts. Each concept is described in detail, laying down the terminology necessary to understand and enforce the TIPA methodology.

2.1 Background

2.1.1 Process approach

There is wide consensus in saying that a better organization favors better products and services. Quality approaches aim to provide frameworks to support this aspiration and managers aim to convert this aspiration into reality.

Early **quality controls** were deployed in manufacturing industries, checking the quality of products after manufacture. Later on some quality activities were performed in order to prevent faults rather than only detect them afterwards. As more and more quality activities started focusing on the organization of the work and the practices, rather than only checking the products, we started talking about **quality assurance** such as Total Quality Management. With this approach the whole company was involved in order to apply quality principles, with the participation of all employees. The goal was to reach zero faults, with continuous controls.

Today we think in terms of a horizontal view with links between activities that deliver products and services. So in order to function effectively, an organization can identify and manage these numerous linked activities. A set of managed activities that uses resources under control, in order to transform inputs into outputs, can be considered as a **process**. Most of the time, this output will be the input of another process.

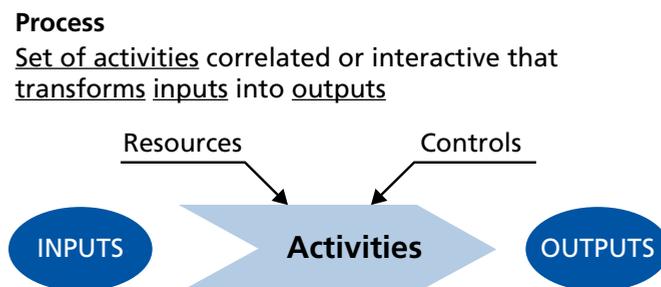


Figure 2.1 Definition of a Process

One of the most significant standards used in the services sector is the ISO 9001:2000 standard (Quality Management Systems – Requirements). It promotes the adoption of a process-based approach when developing, implementing, and improving the effectiveness of a Quality Management System. It helps increasing customer satisfaction by making sure customer requirements are met. The system with all implemented processes is in a continuous improvement cycle. It is also based on principles that support quality management systems:

- Customer focus
- Leadership
- Involvement of people
- Process approach
- System approach to management
- Continual improvement
- Factual approach to decision making
- Mutually beneficial supplier relationships

In short, the application of a set of processes, that is to say, a system of processes within an organization, together with the identification, interaction, and management of these processes can be referred to as the “**process approach**”.

We can stress three main advantages of a process approach:

- It is a powerful way to organize and manage activities throughout a company in order to create value to customers
- It provides horizontal connections between various functional units, with focus on the business goals of the company
- It enables the improvement of interface management between organizational areas: there is an ongoing control of interactions between processes and interfaces within the functional units of the company

Nowadays many quality frameworks and standards are based on processes and advocate continuous process improvement. In the IT Service Management domain, the ITIL de facto standard is the most significant.

2.1.2 ISO/IEC 15504 standard for process assessment

The TIPA framework puts the process approach into practice by providing IT Service Management processes founded on ITIL, with an associated assessment technique based on the ISO/IEC 15504 standard. This international standard describes the generic framework for process assessment.

The International Organization for Standardization (ISO) has published a standard to harmonize the multiple approaches to assessment being developed by various organizations, projects and initiatives.

The current standard describes generic guidelines on how to perform process assessment. When applying it to a specific domain, the processes only need to be described in specific process models (known as Process Reference Model and Process Assessment Model).

Since the publication of the ISO/IEC 15504 standard describing a generic framework for process assessment, there has been increasing interest in the development of these domain-specific process models. Based on this principle, TIPA was created as an IT Service Management specific process model that allows performing process assessments on this domain.

The TIPA methodology follows the concepts of standard process assessment as described in ISO/IEC 15504. It applies them to the specific domain of IT service management, based on a process model developed by the CRP Henri Tudor, for the processes proposed by the UK Office of Government Commerce (OGC) in ITIL® v2. On this basis, TIPA can be stated as an ISO/IEC 15504 compliant process assessment framework of IT Service Management based on ITIL v2. It allows assessors to position processes on a maturity scale. It can be the starting point of an improvement project and it also allows benchmarking processes of several suppliers for supplier selection purposes.

2.2 Reference process and models

Process assessment is an activity that aims to compare the actual processes performed in an organization with reference processes. A reference process includes typical activities specific to that process and also general characteristics that will help to measure how the various aspects of the maturity scale are covered. In this section, we describe the content of these reference processes.

2.2.1 Process specifics high-level description

The overall principle underlying process assessment is the belief that most organizations perform a certain amount of activities that are identical from one organization to another.

Even if each organization is specific and does not perform its processes in exactly the same way as its competitors do, there are always similarities in the way activities are conducted: the same process in two organizations will have the same objective. For example, the purpose of the Incident Management process is to restore normal service operation as quickly as possible and minimize the adverse impact on business operations.

There is also a high probability that these processes go through similar steps and that identical high-level tasks are performed to achieve the objective.

Since some activities and processes are standard, that is to say, common to many organizations, it is then possible to define the best way to execute these activities. In most domains, **best practices** can thus be gathered to define a standard way of performing a process. This reference process will not dictate how to realize every detailed task, nor will it give indications on the order in which these tasks should be performed, what tools should be used or who will participate. A reference process, resulting from the consensus of experts of the domain, will define the purpose of the process and the main results that should be expected from the execution of the process. **So it will give the “what to do”, but not the “how to do”.** For example, a process description for Incident Management should say that “the incidents are recorded and classified” but should not explain how to do that. Since reference processes seek to be the reference descriptions in a particular domain, they are based on reference documentation, standards, regulations, law or experts’ opinions in that domain.

Ultimately, all reference processes for a particular domain are gathered and organized in a process model or in ISO/IEC 15504 terminology, in a **Process Reference Model (PRM)**. Do not be misled by the term “model”; we are not referring here to graphical representations of these processes as in Business Process Modeling. **A Process Reference Model is a document that groups the structured textual description of processes for a particular domain.** To organize processes within such a PRM (that is, a domain), we usually group them into meaningful groups and sub-groups, which are further described with a short explanation on its content. In addition, the boundaries of the domain are clear and the domain is described in a few sentences.

The following subsections define the precise structure for describing a reference process within a PRM.

Process ID and Name

The process ID is a short and unique identifier for the process.

It often consists of two to four letters that summarize the process name (INC for Incident Management, PRO for Problem Management, and so on).

The process name is a short noun sentence that describes the scope of the process (Configuration Management, IT Service Continuity Management).

Process Purpose

The process purpose is a single sentence that describes the high-level overall goal of performing the process. For example:

“The purpose of the Service Level Management process is to maintain and improve IT service quality, through a repetitive cycle in agreeing, monitoring and reporting upon IT service achievements and through corrective and progressive actions”.

Process Expected Results

The Process Expected Results express the observable results anticipated from the successful performance of the process (expected results are named outcomes in the ISO/IEC 15504 standard). They are the observable and measurable results of the process. Process expected results are the necessary and sufficient items (usually from two to eight) that demonstrate the successful achievement of the process purpose. They can be:

- Artifacts
- Significant changes of state
- Compliance to specified constraints, requirements.

They are expressed using a declarative sentence with a subject and a verb in the passive form. For example:

1. A Service Level Management Strategy is developed;
2. Service Level Agreements (SLAs) are established and applied all along the SLA life cycle (created, negotiated, agreed, implemented, tracked, monitored and amended);
3. ...

The process descriptions in a PRM are summarized in a table containing all the above-mentioned information.

Table 2.1 shows the example of the description of the Service Level Management process defined in the TIPA PRM inspired by ITILv2.

Process ID	SLM
Process Name	Service Level Management
Process Purpose	The purpose of the Service Level Management process is to maintain and improve IT service quality, through a repetitive cycle in agreeing, monitoring and reporting upon IT service achievements and through corrective and progressive actions.
Process Expected Results	As a result of successful implementation of the Service Level Management process: <ol style="list-style-type: none"> 1. A Service Level Management Strategy is developed; 2. Service Level Agreements (SLAs) are established and applied all along the SLA life cycle (created, negotiated, agreed, implemented, tracked, monitored and amended); 3. The parties involved in the delivery of the services are informed and agree to the commitments; 4. SLAs and Service Level Requirements are reviewed and (re-)negotiated with the customer; 5. A Service Improvement Program is produced and implemented continuously.

Table 2.1 The Service Level Management Process described in the TIPA PRM

2.2.2 Process specifics detailed description

This high-level description of the process objective is not usually sufficient when you want a precise idea of the level of implementation of a process in a particular organization.

The process specifics from the PRM (dealing with the core business of the processes) are completed in a **Process Assessment Model (PAM)** with lower level details on each particular process that will be necessary to perform an accurate and detailed assessment.

The Process Assessment Model includes a list of indicators of the process implementation. These indicators are:

- **The usual activities that are recommended for the processes**
- **Its inputs and outputs (also named Work Products).**

Base practices (BP)

The usual activities performed during the process are called Base Practices (BP).

- They represent a set of actions that might be undertaken to execute the process.
- They are described with a certain level of abstraction.
- They define “what should be done” but not “how it should be done”.
- They are not detailed step-by-step actions.
- They represent the process-specific and functional activities.
- They use process inputs and contribute to the production of process outputs.
- They contribute to the production of process outcomes.
- They eventually contribute to the process purpose.

Base practices are described with:

- A number identifying them within a process with the process identifier, BP and a sequence number (such as SLM.BP4 for the fourth Base Practice in the SLM process)
- A name starting with a verb
- A description with more details as a sentence also starting with a verb
- A reference between brackets indicating to which expected result(s) the base practice contributes.
- An optional note to include precise information.

For example, a base practice would be expressed in this way:

SLM.BP5: Achieve agreement: negotiate SLA with the customer to finalize its content and with the service providers to ensure that the targets are achievable. [Outcome 2]

We now take again the example of the SLM process, introduced in the previous subsection. The table describing the process in the PRM (Table 2.1) is completed with additional information in the PAM to produce Table 2.2.

Process Name	Service Level Management
Process Purpose	The purpose of Service Level Management process is to maintain and improve IT service quality, through a repetitive cycle in agreeing, monitoring and reporting upon IT service achievements and through corrective and progressive actions.
Process Expected Results	As a result of successful implementation of the Service Level Management process: <ol style="list-style-type: none"> 1. A Service Level Management Strategy is developed; 2. Service Level Agreements (SLAs) are established and applied all along the SLA life cycle (created, negotiated, agreed, implemented, tracked, monitored and amended); 3. The involved parties by the delivery of the services are informed and agreed to the commitments; 4. SLA and Service Level Requirements are reviewed and (re)negotiated with the customer; 5. A Service Improvement Program is produced and implemented continuously.

<p>Base Practices</p>	<p>SLM.BP1 Establish Service Level Management strategy: determine the service level management strategy to ensure that an SLA can be defined, agreed, published, monitored and reviewed to satisfy the organization and customer's needs. [Outcome 1]</p> <p>SLM.BP2 Gather Service Level Requirements (SLR): Identify and gather SLA requirements and constraints from involved parties: providers, customers and IT. [Outcome 2]</p> <p>SLM.BP3 Establish monitoring capabilities: ensure that all indicators included in the SLA could be monitored and measured. [Outcome 2] Note 1: Nothing should be included in an SLA unless it can be effectively monitored and measured at a commonly agreed point and it is essential that monitoring matches the customer's true perception of the service.</p> <p>SLM.BP4 Establish SLA for customer review: create a first version (draft version) of the SLA for the customer in order to finalize it and achieve agreement. [Outcome 2] Note 2: The SLA should be worded in a clear and concise manner in plain language and leave no room for ambiguity.</p> <p>SLM.BP5 Achieve agreement: negotiate SLA with the customer to finalize its content and with the service providers to ensure that the targets are achievable. [Outcome 2] Note 3: SLAs will be dependant on the performance of internal IT groups (Operational Level Agreements) and external suppliers (sub-contracting contracts). These contracts (Operational Level Agreements and sub-contracting contracts) should be taken into account when the goals are set.</p> <p>SLM.BP6 Ensure the education and the awareness of SLAs: ensure that all staff (Service Desk, support groups) is aware of the implications of SLAs and that customers are also informed about the existence of SLAs and agree to the commitments. [Outcome 3] Note 4: An intranet is a way to publicize SLAs.</p> <p>SLM.BP7 Gather reports from other processes: gather and collect appropriate information from the Service Support and Service Delivery processes to justify the results. [Outcome 2] Note 5: The reports should be coherent and appropriate with the SLA targets.</p> <p>SLM.BP8 Review SLAs: organize periodic review meetings with customers (or their representatives) to check the service achievement in the last period and to prevent any issues for the coming period. [Outcome 4] Note 6: After review, it may be necessary to amend the existing SLA in agreement with the customer and the service providers. This amendment is under control of Change Management.</p> <p>SLM.BP9 Identify and instigate a Service Improvement Program (SIP): instigate a SIP to identify and implement whatever actions are necessary to overcome the difficulties and restore service quality. [Outcome 5] Note 7: The SIP is the result of the SLA periodic review. The points to improve are reviewed and verified. The targets from the last period are verified and examined. In practice, these activities are recurring activities, which depend on the other processes.</p>
------------------------------	---

Table 2.2 The Service Level Management Process described in the TIPA PAM

Input and output Work Products (WP)

Work Products are items that are either used or produced (or both) when performing the process. They are the particular inputs and outputs of the process; however, they are not necessarily the main objectives when executing the process.

For example, producing a SLA Review Report is not the main objective of the Service Level Management process but this report is created during the process. Its presence is an indication that the process is executed correctly. If the only result of the Service Level Management process is the Service Catalogue, you can see that the process is executed with less maturity than if you also have a Service Level Management strategy, an SLA catalogue and a Service Improvement Program.

Work Products are displayed in a table following the description table of the process. They are described with:

- A number (3-12)
- A name
- A reference number for the expected result they contribute to
- A reference number for the base practice during which they are used or produced.

The table lists the input and output work products in two columns. A particular work product can appear as both an input and an output of the process.

For example, the work products for the Service Level Management process of our example are shown in Table 2.3 .

You can see here that the SLA catalogue is produced by one activity of the process and is used by another activity of the same process. It is both an input and an output for the process.

Work Products	
Inputs	Outputs
	3-16 Service Level Management Strategy [Expected result 1][SLM.BP1]
	2-03 Service Catalogue [Expected result 1][SLM.BP1]
	2-04 SLA Structure [Expected result 1][SLM.BP1]
	8-02 Service Level Requirement
8-04 Operational Level Agreement [Expected result 2][SLM.BP2, 5]	
8-05 Sub-contracting contract [Expected result 2] [SLM.BP2, 5]	
8-03 SLA catalogue [Expected result 2][SLM.BP4]	8-03 SLA catalogue [Expected result 2][SLM.BP4]
6-18 Service Support and Delivery report [Expected result 2][SLM.BP7]	
	6-19 SLA review report [Expected result 4][SLM.BP8]
	3-06 Service Improvement Program [Expected result 5][SLM.BP9]
	6-20 Service Level Management report
	6-03 Process Improvement opportunities

Table 2.3 Work Products for the Service Level Management process

Detailed description of Work Products

Input and output Work Products are specific to the domain described in the model. For example an OLA (Operational Level Agreement) document will be typical for the IT Service Management domain.

A single work product could be produced by a particular process (as output) and could be used by another process (as input).

For example, a Configuration Management Database (CMDB) is produced by the Configuration Management process and is used by the Change Management process.

The content of the work product is the same whether it is produced by a process or used by another. In a PAM, the typical content of a work product is described once in a table describing all work products.

Each work product is described with:

- A number
- A name
- A list of characteristics: bullet points of items that are usually contained in that type of document, a list of items that usually constitute the work product.

Table 2.4 is an extract of the table describing the characteristics of all work products in the TIPA process model.

WP ID	WP Name	WP Characteristics
6-01	User satisfaction survey	<ul style="list-style-type: none"> • the purpose of user satisfaction evaluation • method used for evaluation • requirements used for the evaluation • assumptions and limitations • the context and scope information required: <ul style="list-style-type: none"> • date(s) / period of the evaluation • organizational unit assessed • scope / coverage • customer data • evaluation instrument (check-list, tool) used • the result record: <ul style="list-style-type: none"> • data • identifies the required corrective actions • improvement opportunities
6-02	Incident Management report	<p>Report that describes the quality of the process details of the activities. For example:</p> <ul style="list-style-type: none"> • total number of incidents • mean number of incident per day, per week, per month • mean time of incident resolution • number and percentage of incidents resolved remotely, without the need for a visit.
6-03	Process Improvement opportunities	Report that describes the improvement areas of a process.

Table 2.4 Extract of a PAM Work Product Characteristics