



# Improving business processes and delivering better e-services

A guide for municipalities from Smart Cities



# Contents

|  |           |
|--|-----------|
| <b>Introduction</b>                          | <b>03</b> |
| Chapter 2                                    |           |
| <b>Business processes are key</b>            | <b>04</b> |
| The customer                                 | 05        |
| Business process mapping                     | 07        |
| Planning and execution                       | 08        |
| Chapter 3                                    |           |
| <b>Developing the Common Process Model</b>   | <b>10</b> |
| A common language                            | 11        |
| Consistency                                  | 12        |
| Chapter 4                                    |           |
| <b>Preconditions – values and concepts</b>   | <b>14</b> |
| Chapter 5                                    |           |
| <b>Why use process mapping?</b>              | <b>19</b> |
| Measuring success                            | 19        |
| Customer-centricity                          | 22        |
| Scoping the project                          | 24        |
| What and how to model, measure and re-design | 26        |
| Communicating process maps                   | 27        |
| Map making                                   | 29        |
| The improvement challenge                    | 30        |
| Support from management                      | 34        |
| Business process maturity                    | 36        |
| Chapter 6                                    |           |
| <b>From processes to e-services</b>          | <b>38</b> |
| Chapter 7                                    |           |
| <b>References</b>                            | <b>39</b> |

# 1. Introduction

**Do you know your business and e-service solutions?**

**Is your IT aligned with your business to support, enable and deliver your services?**

Your business processes define your ability and potential to provide customers and employees with effective and high quality services and solutions. Your processes influence your performance, your service delivery and what administrative support is available for your service offerings.

This document outlines a model, or framework, which can help you to improve your existing business processes to support and develop your e-services. The Common Process Model comprises a set of preconditions, directives, guidelines and templates that will help employees in different roles to identify, measure and improve the performance of the business processes that make up your e-service solutions.

The Common Process Model stems from a collaborative project between Karlstad University and the municipality of Karlstad in Sweden, that began in February 2009. The project aimed to develop a simple methodology that would help the municipality to think about, to describe and to improve its business processes in a logical, strategic and self-reflective manner.

The Common Process Model is largely based on research and the experiences of employees from the municipality of Karlstad, but has been enhanced and refined by contributions from local authorities in Edinburgh, Groningen, Kortrijk, Kristiansand and Lillesand. These partners of 'Smart Cities', a project part-funded by the Interreg IVB North Sea Region Programme of the European Union, first described their business processes and improvement initiatives in a series of project initiation documents ( see <http://www.smartcities.info/projects>); these were used to share knowledge and experiences among the project partners and formed the basis of discussions and documentation for a Smart Cities workshop on business processes held in Karlstad in September 2010.

The Smart Cities project is an innovation network made up of 13 governments and academic partners from six countries who are working to improve the development and take-up of e-services and e-government across Europe's North Sea region. Project partners are improving their e-services delivery by rethinking the basics of service delivery, by working with academic and research partners, by changing their innovation methodologies, and by transferring their best practices to other project partners.

This guide is one of many outputs from the Smart Cities project which disseminate the project's findings on the models, the tools and the techniques that can be used to improve municipal service delivery. The guidance in this publication on business processes is based on critical modelling factors, focused and reflective modelling and practical process modelling (e.g. Christiansson and Christiansson, 2006) performed during the Smart Cities project between 2009 and 2011.

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## 2. Business processes are key

Every municipality wants to develop its business, to improve the performance of its daily operational work and the quality of its service delivery. Business processes are the operational activities that provide, produce and deliver its services, with or without an “e” (electronic/digital support). Every organisation consists of professional employees who perform business operations, using a variety of different resources and with different levels of information technology (IT) support.

E-services are the collection of administrative processes that enable governments and municipalities to provide services for their customers (citizens, visitors, companies and other government agencies) through web sites. E-services allow customers to interact with municipalities via the internet; they can ask questions, receive answers and updates on government regulations, obtain official government documents, file applications, pay taxes and bills, and receive payments, to list just a few of the e-services that are commonly delivered by European municipalities.

Governments have placed a lot of emphasis on e-services as a way to improve service delivery. But business development requires a much broader view that goes beyond the front end website; it is essential to consider all the ‘behind-the-scenes’ business processes and what goes on in the back office. It is important to review all the business processes that affect the performance of a service in order to improve daily life for both employees and customers.

### Case Study – Lillesand uses processes to develop e-services

The town of Lillesand in Norway has been working to increase the use of digital application forms to make it easier for citizens to access services and interact with the municipality whilst reducing the administrative burden on its own employees. The municipality described and identified 20 business processes in its documentation system; it realised that many of these could be ‘digitalised’. Lillesand now has a service on its municipal website where citizens can access their case files and see the status of their queries or applications. This tracking service has been achieved by describing and reengineering the processes associated with digital forms, along with specifically designed databases and data warehousing, and integrating digital archives and publishing across multiple channels. Most of the communication with the municipality’s residents is now via digital formats, as are most of the administrative tasks required from municipal employees and community service industries.

## 2.1 The customer

The customer has a key role to play in improving e-services. They participate in the business process – for example by triggering a process when they submit an online request via a website. But their involvement goes much further. Not only do they request a service and receive information, but they also act as a co-producer and have an influence on the service performance, depending on their ability and experience of the service at different points in the delivery process.

It is possible to define and map business operations in the form of processes, but it is important to do this from the perspective of those who will use the maps to improve performance and who need to identify how process reengineering could add value to the customer. The purpose of process mapping is to acquire knowledge about operations across a service or organisation, which can then be used to make informed decisions about improvement measures (see Figure 1).

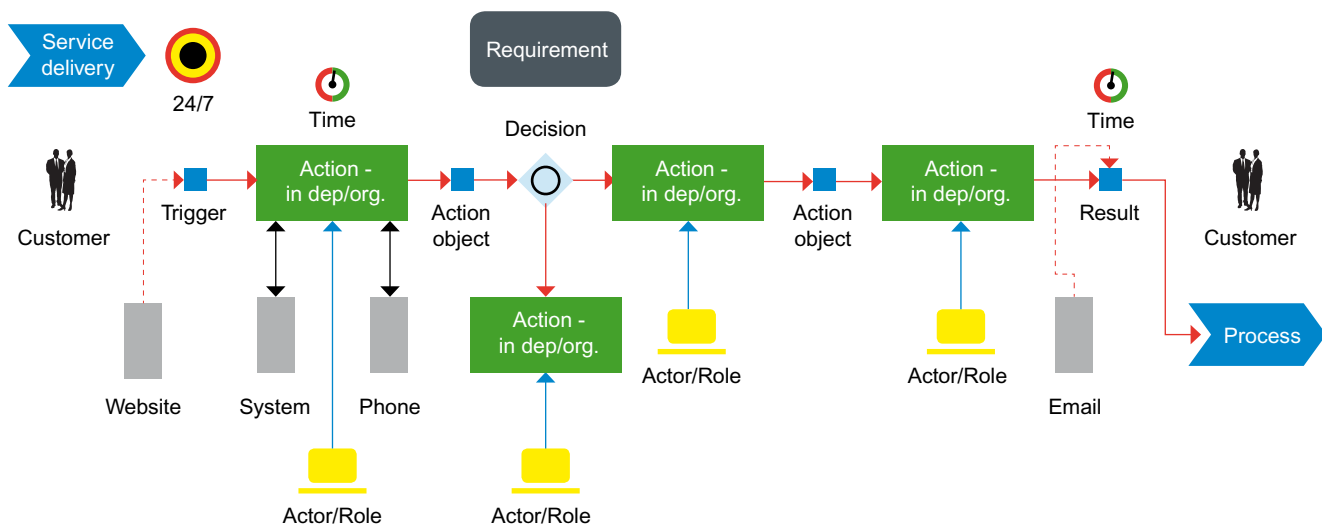


Figure 1. Elements in a business process

Figure 1 shows the elements of a typical business process. An assignment or case is triggered following a request from a customer; different business rules/logic (i.e. decisions and coherent activities in an information/communication workflow) are then applied by various actors in and across the administration. Employees in a professional role or customers perform business operations (actions), using IT to support and enable their actions across different digital channels. A service is delivered – in the form of an answer, a fulfilled request or completed assignment – when the business processes and communication/workflows perform well.

When we look at a mapped business process, we can then begin to ask questions about potential improvements:

- **Which channels are the customers using to request or contact your service?**
- **For each step in the business process**
  - who is the service provider – the customer, employees or IT solutions?
  - what is being communicated – is information being requested or provided?
  - what channel is being used – phone, face-to-face, email or online forms?
  - what systems are involved for data entry, access and archiving?
- **What is the outcome of the service delivery and the experience of the customer?**
  - What channels have been used – phone, face-to-face, email or online forms?
  - What is the feedback from customers about their experience of the service and the value of the outcome they received?

A range of different improvement activities can be used to restructure existing service delivery processes to provide new e-services and establish new ways of working in municipalities. It is vital that you have a shared understanding of end-to-end processes when developing both customer service strategies and more complex e-services before you will be able to connect the customer-facing front end (e.g. the website) and back offices (business processes and systems). Surveys have shown that customers view a municipality as a single, integrated service provider, so e-service solutions that span different departments and other government agencies must be offered to and experienced by customers as if they were being provided by one single/integrated service provider.

The technical specifications of any technology-based product or service, including all e-services, must be based on a full understanding of all of the operational business processes that are required to ensure that a service can be delivered. Well-structured and effective business processes are the prerequisites for business performance in delivering e-services and their supporting contact centres in a municipality service portfolio. It is important to remember that a business architecture and an IT architecture and infrastructure go 'hand-in-hand'. E-services are not just about IT – you need to establish effective business processes as well as deploy appropriate IT to deliver solutions that are useful for customers and employees (employees using an e-service solution may provide efficiency and effectiveness by reducing administration time and having a more secure case handling system).

It is essential to understand not just how the municipality delivers its services, but also how people access them – the sequence of events and interactions known as 'the customer journey'. Understanding how customers interact with and use the service will provide you with the necessary context that you can then use to plan any service restructuring or process reengineering.

It is certainly not enough to focus solely on the deployment of technology. An e-service can be so much more than a web-based application to improve the access and delivery of government services. Organisations that focus more on the “e” (i.e. systems) than on the “business” (i.e. processes) may forget that IT is a means to an end, not an end in itself. It is always important to remember that IT fits within an organisational environment; it is an enabler for the business and customers in a specific context. The demands on an organisation – from government, from customers, from employees – are constantly changing. Businesses will only get a return on their investment in improvement programmes if they focus on changing processes, not their IT *per se*. Your business processes affect your ability to produce and deliver services: IT and systems merely support and enable these processes (see Figure 2).

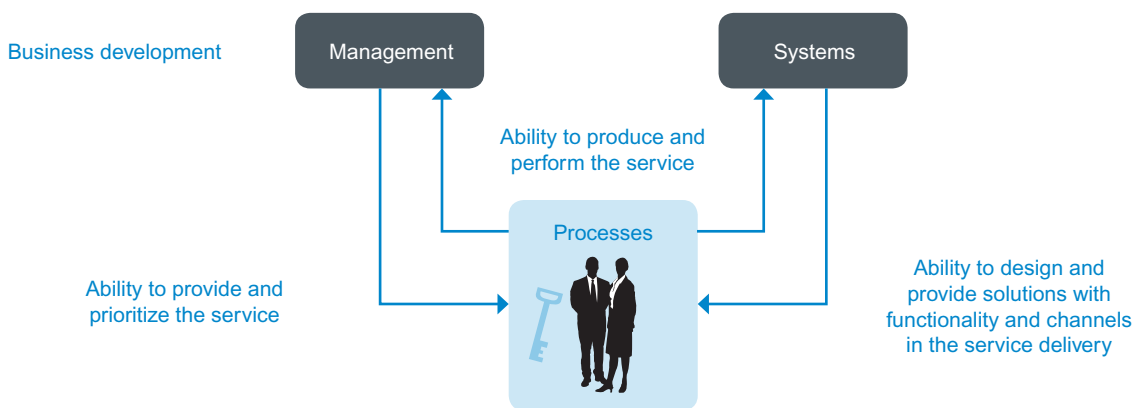


Figure 2. Business processes are the key to business development and improvement

## 2.2 Business process mapping

As you develop a service, it is essential to draw on your knowledge of business processes; this knowledge must form the basis of any analysis, (re-)design, testing, evaluation and launch of new business logic and information systems.

Process mapping begins when you realise that you need a map! This could happen for many different reasons, or be the result of a business development project. Ideally, business development initiatives are based on facts and information gathered from the people who produce and deliver the service (the people help to define what is done, what is expected and can share their experiences of business operations). But once this information has been collected, you may then need a more complete view of business operations in your organisation and between organisations in order to decide who should do what and what resources they might require to handle a case.

A request for process mapping should first be checked and then submitted to management. Once the mapping exercise has been approved, planning can begin.

## 2.3 Planning and execution

Process mapping must be carefully planned. You must work out how exactly you are going to perform the exercise, and allocate the necessary resources and appropriate staff to the project. The mapping work involves hands-on modelling, aided by the work of the mapping team.

The approval process for the map is also important. For example, each process description should be agreed with the people involved in performing the process, then submitted to whoever is taking overall responsibility for the map (i.e. whoever first requested it) or the administration unit overseeing the mapping work who may amend the descriptions according to how they want the map to be used and its application in business improvement. Through an iterative feedback process, the process descriptions may be refined until they are eventually agreed by all parties.

The end result should be a set of useful process descriptions and a complete end-to-end map of the business process(es) under scrutiny (see Figure 3).

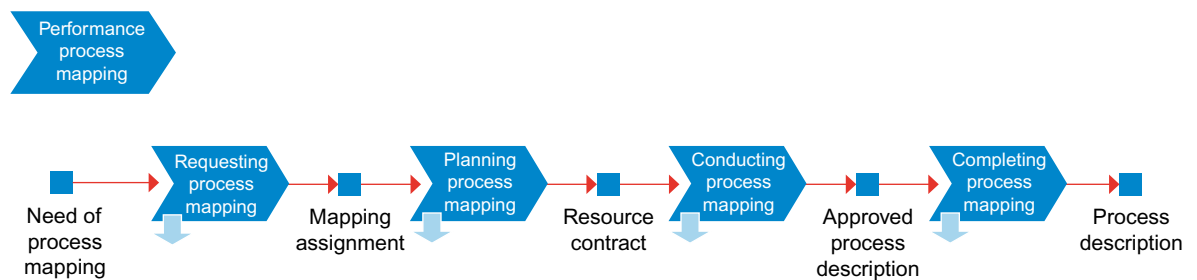


Figure 3. The process of process mapping

The rest of this document looks at the commissioning and functional steps of process mapping.

**We believe that effective mapping projects have more chance of success and are more likely to achieve good results if they adopt a well-defined modelling strategy from the outset of any business improvement programme.**



## Case Study – Karlstad develops the Common Process Model

Karlstad municipality has worked hard to adopt an agreed standard setting out how it should think about, implement and describe business processes. The modelling technique (i.e. the “process of process mapping”) results in a “clickable” map which is accessible via the municipal intranet and the Barium process mapping software tool.

Given that the quality of process descriptions affects the outcome and benefits of any initiative to improve business processes, it is important to plan the process by which the process descriptions are actually constructed. By using a common modelling methodology, process descriptions can be compared and used as a basis for discussions and development plans between various departments and administrations.

Employees in Karlstad were anxious to bridge the gap that existed between modelling techniques for business processes and those for IT processes/solutions. The municipal department for technical services and property management is largely responsible for managing the municipality’s internal assets and IT infrastructure. It has 500 employees who follow management procedures that include mapping, measuring, improvement and benchmarking their business processes. However, the department has found the task of business process mapping a challenge and numerous problems have been encountered, for example the lack of a shared process-oriented mind set amongst employees, a lack of common standards, poor process specifications, minimal process modelling and training and a lack of mapping methodologies.

As different process mapping initiatives were taking place across the municipality, Karlstad developed the ‘Common Process Model’ to ensure that every department used a common language to describe their business processes and ensure that e-services would be developed in a coherent and consistent fashion throughout the organisation.

The Common Process Model is designed to support business process mapping projects, and gives practical advice on how to go about the various tasks that make up a successful mapping project. The aim was to produce a model that is easy to use, and which is understood by employees who have different levels of mapping skills and experience. The Common Process Model also includes a number of tools, from simple drawing tools (for ‘clickable’ process maps) to a more advanced modelling language. Some departments are using these tools to develop and design full e-service solutions and system architectures.

### 3. Developing the Common Process Model

Karlstad municipality worked with Karlstad University to develop the Common Process Model, which is a simple process mapping methodology to make its business improvement initiatives more effective. The model sets out the basics of how processes should be organised, and the underlying concepts for effective business processes. It also describes the preconditions, directives (procedures), guidelines, templates and roles that have to be brought together to create a platform for how the organisation should think about, describe and work towards improving its business processes. The Common Process Model aims to help employees really think through all the issues and steps of a business process and produce consistent process descriptions that can be used for effective business improvement (see Figure 4).

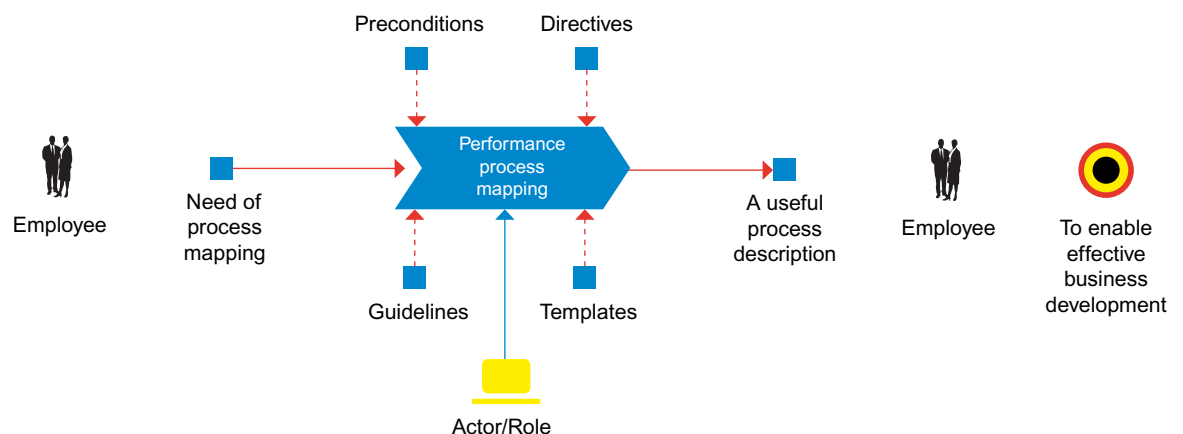


Figure 4. The Common Process Model

Explaining how business operations actually work is important in all organisations, as they strive to improve their service delivery. To achieve this everybody working on business improvement programmes – those who must explain, understand and make decisions – must all speak the same process improvement ‘language’. Although a municipality may be quite fragmented, with a number of semi-autonomous departments, there is a shared obligation to meet the needs of citizens and companies (i.e. ‘customers’) in the municipality. Process concepts and process descriptions should be understandable not just within organisations but also between organisations, because the drive for service improvement also exists at national and international levels; and there is certainly scope and increasing pressure to develop joint e-services that work across cities and even across national borders.

### 3.1 A common language

Usable and understandable process descriptions can help management teams and employees grasp the benefits of good process design and the value of “process thinking”. The use of a common language in a business improvement project (either internal or between organisations) makes this work more effective because information can be exchanged and disseminated efficiently. Perhaps this is easier to see if you imagine the opposite scenario: if different teams use different process mapping techniques then a great deal of time and resources will be spent translating the models between groups.

The Common Process Model is designed to be used in all types of large and small business improvement projects, and to work without requiring any specific modelling tools or languages. The goal of the Common Process Model is to allow employees to create usable process descriptions that can then be accessed and used by people with different roles and areas of responsibility, for example political, management, operational and systems. Decisions about business development can then be based on knowledge that has been acquired from staff who are performing the business operations and who will be a part of, or be affected by, any business improvement solutions.

## Case Study – Kristiansand identifies the advantages of a process approach

Seven advantages of using business process maps and descriptions (based on the experience of Kristiansand municipality):

1. They quickly and clearly show the benefits of standardisation among employees involved in a business process.
2. They are an important way to empower employees, giving them an influence over and the potential to improve their work and working environment.
3. They provide greater transparency for customers, who can see how their requests and applications are processed using flow chart diagrams.
4. They improve the quality of services through the standardisation of routine and administrative tasks.
5. They reduce the time it takes for new employees to understand what they have to do to work efficiently.
6. They improve communication with customers due to a better understanding of the processes involved in their requests.
7. They increase predictability and improve levels of appropriate handling of cases and applications.

The Common Process Model has been developed to create a ‘living’ process map that can be maintained, updated and refined by the owner of the process model on a continuous basis, incorporating feedback and the real world experiences of employees.

## 3.2 Consistency

The process descriptions in the Common Process Model must adhere to certain criteria, so employees involved in formulating descriptions must be aware of any description requirements. It is important that employees have access to the descriptions standards, guidelines and mapping tools of the Common Process Model over the web or the organisation's intranet. They must also understand and master the model, so they can use the model correctly. For example, the core process descriptions should always be based on the directives in the model, so that they can be shared and understood across departmental and organisational boundaries.

Process maps are dynamic; they reveal how processes can be improved, which in turn will alter the process map. But it is important to prioritise and target process improvement initiatives, so employees with experience in process mapping should document and collect their work on a regular basis and provide feedback reports to the process model owner who can then make decisions about further development in the context of other internal issues, results from other research programmes and the experiences of business improvement programmes in other municipalities.

Finally, process descriptions must be labelled, stored, published, disseminated and updated (by a designated employee) so that anyone involved in business development and improvement in an organisation can easily find and use accurate process maps.

Above all, you should remember that tools can be extremely helpful – in this case they can help to establish and visualise business processes and their interactions – but they are only as powerful as the employees are experienced at using them. Employees must be trained and kept well informed throughout a mapping process – each member of the team should be allocated specific roles and be able to follow the methodology. It is vital that the mapping team receives the necessary support for them to come up with accurate and useful process descriptions.

## Case Study – using process descriptions in Kortrijk

In 2003 the city of Kortrijk launched a process mapping initiative using a set of process description tools. The project was driven by the municipality's aim to improve the quality of its services and introduce efficiencies within the organisation. The idea was to create a kind of catalogue or 'knowledge base', which listed and described every business process in the municipality.

But this ambition was never achieved. Few employees used the finished descriptions which were often too complex or too detailed. Nevertheless, the exercise was not a complete failure because it increased greater 'process-thinking' among employees and also highlighted a number of inefficient or duplicate processes which were immediately targeted for simplification.

During 2009 a newer version of the process description tool was deployed. At the same time, the mapping programme was integrated into a much bigger programme to improve customer service. So what started out as a software upgrade effectively made process mapping a central feature of Kortrijk's customer service improvement programme. Municipal leaders realised that better process descriptions could result in a better delivery of customer services.

As part of the Smart Cities project Kortrijk spent some time looking at the different channels it could use to deliver its services: website, telephone and desk. In January 2008 the city launched a new website where customers could access product and service descriptions. These descriptions were one of the main sources of online information about local services for Kortrijk citizens. These descriptions were also invaluable a year later when they were used as the basis of an FAQ on services for Kortrijk's new central customer contact centre.

However, the agents in the contact centre and the one-stop-shops (counters) around the city sometimes needed more detailed information on business processes, especially to answer questions about more complex services. It made sense to combine the product (service) descriptions of the public website and the internal process descriptions available on the municipality's intranet. This link between product and process is only available for employees; it helps them to understand the links and interactions between the front and back offices.

For example, on the Kortrijk website there is a clear description of the city's passport application service, providing customers with all the information they need to know: what is it? why do you need this? how do you obtain it? who do you contact? how long does it take to get it? how much does it cost? The process description of the passport service provides employees with all the information and links to the different steps involved in passport application and delivery, including links to software and current legislation and regulations. Citizens and employees both have access to the same basic 'consumer' information, but employees can access much more complex and detailed information on the actual work required to approve and send out a passport.

## 4. Preconditions – values and concepts

Before an organisation undertakes a process mapping exercise it is important to that they understand the basic ideas and values of process orientation in business. This knowledge will make it easier to formulate what process descriptions need to describe and why.

According to Davenport (1993), Hammer (1993) and Grönroos (2000), a process-oriented service approach means that the organisation will:

- **link the purpose and objectives** of a business process to the goals of the organisation;
- **base process maps on the knowledge of people involved in the business operations under scrutiny**, but also take account of those people who have expectations of a service and are affected by its delivery (i.e. citizens and businesses);
- **take a holistic, end-to-end view of processes** to add significant value to the external customers' experiences and what they get out of a service;
- **assess and describe operations 'horizontally'** i.e. from the point at which a customer makes some kind of request, through all the tasks that must be performed in a logical workflow, to the delivery of the service to meet the customer's request;
- **consult with users** to identify value-creating tasks (what) and work procedures (how) that will satisfy them and ensure they receive a tangible value (e.g. an effective and useful e-service);
- **identify and describe available resources and enablers** (e.g. IT) to meet the agreed service standards for business performance and service delivery;
- **ensure that employees can identify their roles in the process flow** and use this understanding to identify further improvements to the business process.

## Case Study – Groningen's process innovation

In September 2009 the municipality of Groningen set out its plan to become a more process-driven organisation. It established the Process Innovation Team (PIT) to achieve these ambitions.

PIT was first given three assignments:

- Show the added value of process innovation through two projects.
- Develop a generic Process Model.
- Help departments where needed.

The main goal of this initiative was to promote process innovation within the municipality. Groningen's vision was to transform itself from a task-focused organisation into a process-driven one.

At the start of the project, PIT got together with some members of the project's steering committee and developed a general procedure for process innovation. The most important aspect of this procedure is the use of workshops with staff members who are familiar with the process under review. These are dubbed the 'brown paper sessions'.

The existing business process is drawn out on a large sheet of brown paper, including all its activities, bottlenecks and irritations. Then an idealised version of the process is drawn out on a second sheet of brown paper. This version displays all the roles involved in the process, the flow of documentation and any other required systems (e.g. IT). These workshops decide how to change to the new process: with the guidance of a facilitator, staff members go on to analyse and improve the process themselves.

Groningen has also run an in-house course on process management. The more theoretical knowledge from this course and the information gathered from the 'shop floor' employees is making it possible to further develop and refine the municipality's approach to process improvement.

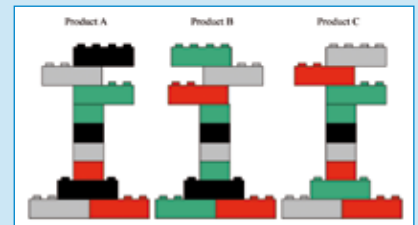
At present Groningen is using the RATIO model to guide its process innovation. RATIO stands for Reflect, Analyse and Assign, Implement and Observe. Each part of this model contains an explanation and a number of 'tools'. Groningen's process innovation procedure provides a toolkit for staff members involved in process management.

Examples of tools are:

- intake form template
- value stream mapping
- waste analysis (lean management)
- brown paper sessions
- template for information analysis
- plan of approach
- process mapping
- risk analysis
- The Process Game
- evaluation template.

## Case Study – the process game

The 'Process Game', which was introduced to the Smart Cities partners by Groningen, is run when the organisation is about to begin drawing up a roadmap for the (re-)design of various processes. It is also a good technique to demonstrate to employees what it means to work in a process-oriented manner.



In the Process Game, every participant is involved in the running of “Drizmo Productions”. Drizmo uses a number of components to build and sell three different widgets in a complicated manufacturing, warehousing and sales process. Players are divided into two or more teams, and each team starts with the same manufacturing and sales processes. Every player in each team is given a role in this initial process. When the game begins, each team receives a series of sales orders and has to order components, make the widgets, and then ship them to their customers. After five sets of orders, each team stops and works out how much money they have made by analysing their sales, and doing an inventory of the unused components and of the un-delivered widgets. The teams can then modify their ordering and manufacturing and administrative processes, and then the game begins again. This iterative process is repeated three or four times. During the game, the participants are introduced to ‘lean’ principles and are challenged to apply them to Drizmo Productions. Participants have to work together to try and improve the company’s processes as they strive for maximum yield and minimum waste. They discover that teamwork and fine-tuning are necessary to achieve the best results.

The lessons learned from playing The Process Game should then be integrated into the everyday work processes of staff members.



Once employees understand the basic concepts of the process approach and the elements of the Common Process Model, it will be much easier for them to see why they need to describe business processes, what they need to describe, and how to go about this task. Given that the aim of this approach is to develop a common language and framework for process mapping, it is imperative that the concepts are made familiar, are clearly defined, and are disseminated in and between departments and organisations.

The organisation's approach to describing processes, services and process improvements must be clear and kept up-to-date. Some e-services concepts which are already familiar to most employees and customers include digital forms and the GUI (graphical user interface).

The concepts used by the Common Process Model are categorised into four groups: roles, directives, guidelines and templates. 'Roles' are a list of tasks or 'job specifications', which the Common Process Model recommends filling to support successful process mapping and process improvement work. A 'directive' is a steering instrument: directives should clearly stipulate the prerequisites, basic ideas and rules that must be followed to ensure that theory and best practice are incorporated into process maps. Directives make sure that process orientation 'happens' within the organisation. 'Guidelines', meanwhile, are recommendations, useful tips on how to think and act for a successful result. The Common Process Model guidelines stem from the practical mapping experiences of others; they provide plenty of case studies and examples and highlight areas that require particular attention. Finally, the model's 'template' supports process mapping teams, providing a comprehensive checklist of what must be included in process descriptions and maps.

## Case Study – Karlstad's 'e-Office'

The Technical Services and Property Management department in the municipality of Karlstad has mapped around 200 processes, using parts of the Common Process Model and an advanced process analysis tool. Other departments in the municipality are just starting to take this approach – they are just beginning to describe their business processes and are using a range of different approaches, methodologies and tools.

Karlstad's local action plan for 2009-2011 says that municipal departments should describe and map their most used (core) service processes "as-is". This will provide a reference point from which it will be possible to simplify many services for citizens and identify how processes may be improved with "e" solutions.

As it intends to roll out many new e-services, the municipality has established a virtual organisation called the 'e-Office' to gather knowledge and experience in e-service development from both within the municipality and from external sources. The e-Office's role is to coordinate and support the

development of e-services in the municipality so that Karlstad can offer more and better services to its citizens and local businesses.

The development of the Common Process Model was outlined in the local action plan, which also recognised the importance of providing support to introduce and improve employees' skills and knowledge about tools, common e-service solutions and their implementation. With its knowledge management approach, the e-Office is encouraging collaboration, learning and sharing across the municipal departments, although always at a pace set by each department.

## Case Study – using processes to improve services in Norway

The municipalities of Kristiansand and Lillesand in Norway are integrating and reengineering a wide range of information sources and processes – process descriptions, databases, data warehouses, digital archives, online forms and publishing work flows – to provide citizens with a wide range of new e-services. Kristiansand currently offers around 50 e-services, which are accessed using about half of the online forms available on the municipal website. Most of these forms feed information into the municipality's central database for further (manual) action; at present only two online forms trigger fully automated workflows and responses to the customer.

In Kristiansand there is no process mapping within or between organisations, just some basic analysis of small parts of processes which have been targeted for improvement. Here there is a strong drive for operational improvement and better documentation, so the municipality has focused on technical solutions rather than on more holistic process-oriented solutions.

In Lillesand there has been a much stronger focus on process mapping thanks to the availability of new e-service solutions. The municipality wanted to deploy e-services, but first needed to know how well the organisation was managing and processing its existing information, hence the greater focus on business processes rather than operational tasks. Consequently, although the number of processes and digital forms is lower in Lillesand than it is in Kristiansand, the level of automation of processes that have been process mapped is higher.

Identifying and describing business processes may seem simple in theory, but the actual practice can be complex, depending on how many employees and organisations are involved in the processes – hence the need for a process mapping exercise. A strategic and carefully managed approach to process mapping will help to increase the chances of success. A business improvement and process mapping strategy (covering why, what and how) facilitates effective business development: problem areas or target services can then be identified and prioritised for process improvements.

## 5. Why use process mapping?

There are many drivers behind the introduction and improvement of e-services in local government. These include EU directives, national legislation, and numerous government cost saving and efficiency initiatives. There is also an explicit demand for greater transparency in municipalities through the publication of comprehensive service catalogues which show the services that municipalities are delivering. At the same time, citizens and businesses increasingly expect to be able to use more and more web-based information and communication systems and to have access to self-service solutions.

The main reason for conducting a process mapping exercise prior to the development of an e-service is to ensure that all the tasks, operations and systems associated with the service are appropriately designed and optimised.

Process mapping may also be used to review existing processes (the “as-is” process) to analyse and evaluate the current level and quality of service provision. An “as-is” process description should clearly catalogue existing business processes, and should also identify and explain any weak points or bottlenecks in current processes and provide information on how they may be improved.

Any organisation wishing to move towards a process-oriented approach needs their process descriptions to be extremely clear and honest in their analysis of the problems, strengths and possibilities within a process. In addition it is important to make sure that the final target (the “to-be”) process descriptions must be understood by a range of employees with diverse backgrounds who may perform quite different roles, as well as being understood by customers and by IT suppliers. This clarity will ensure that everyone has a shared understanding of the “to-be” process so that it is implemented correctly.

### 5.1 Measuring success

What is the motive for business development? Motives are largely defined by the expected impact of any improvement initiative. In e-service development, improvements in business processes can usually be measured in terms of business performance and customer value. Potential benefits in business performance can also be included in process descriptions, for example by explaining in detail how cases could be handled, what work is required, why, how and in what order.

The performance of business processes should be monitored so that you are able to obtain regular reports on the time that is taken to complete specific tasks; you can then compare these times with any published or expected service levels and agreements. Quality indicators can also be measured and published. Employees may find it useful to see the results of their work being regularly monitored, and even have them published as service level indicators.

The main purpose for this close monitoring and measurement activity is to empower employees within a culture of process innovation, to allow them to develop their own work patterns and to have direct input into the redesign of how their tasks should be done.

The use of digital forms is another important part of developing e-service solutions that may require changes in existing business processes. Digital (online) forms make it much easier for most customers to access a service, while simultaneously reducing the administrative workload for employees.

Another reason to use process mapping is to streamline the management of personnel. With process maps it is much easier to see the impact of personnel changes, to identify the need for recruitment, and to draw up job specifications. Process maps also make it easier to define and standardise personnel roles, identify training requirements or to indicate where and how certain tasks may be automated.

The primary rationale for process mapping is its contribution to creating value by improving the relationship between the customer and the organisation over time. Customers perceive greater value if they are able to communicate and interact with the municipality more easily, for example by using digital forms and email.

It is clear that there are different, but mutually beneficial, motives for performing process mapping for different stakeholders. These motives, from the perspective of the organisation, may include:

- basing organisational decisions on the actual circumstances within the organisation (i.e. basing decisions on the tasks that are actually being performed, rather than those that the organisation expects are being done);
- controlling business operations and linking operations with appropriate resources;
- streamlining business operations, communications and information flows so that they fulfil political decisions and policy objectives;
- establishing a transparent audit trail for certification (e.g. ISO standards) and quality assurance procedures;
- increasing the focus of business performance and service delivery towards service users (i.e. customers);
- creating an overall evidence-based picture of the business as a foundation for developing and (re) designing processes, following up problems, and improving service levels both within and between departments and organisations;
- increasing the potential for forward-thinking, future planning and developing greater flexibility and responsiveness;
- capturing the knowledge of experienced civil servants (e.g. those who may be about to retire) and enabling the organisation to bring less experienced staff and new recruits 'up to speed' quickly;
- codifying the tacit knowledge within the business and fostering opportunities to share experiences and encourage training between employees 'benchmarking' processes;
- improving communication and interaction between municipal departments, organisations and politicians;
- providing front office staff (i.e. public-facing staff who work at counters and answer the telephone) with the most relevant, accurate and reliable information and work procedures;

- encouraging commitment and participation by employees by giving them better understanding of how their work and their business systems contribute to the organisation's objectives and vision;
- fostering participation, acceptance and readiness for change and creating a work culture which embraces continuous business improvement.

## Case Study – using service declarations to deliver e-services

More than six out of every 10 citizens surveyed in the municipality of Kristiansand in southern Norway said they preferred to use the web as their main communication and information channel with the municipality. This increasing demand for online services is coupled with Kristiansand's own desire to rationalise its services and work more cost effectively. Citizens who prefer telephone or face-to-face counter services will still have these opportunities to access services, but the municipality is working to ensure that communication – plus all internal administrative tasks – will be possible using electronic channels.

Employees use the same published “service declarations” for giving information to and communicating with customers; they may also use the online forms to make applications for services on behalf customers using counter services or using the phone. Employees can also answer questions about processes using online process descriptions. Kristiansand prefers digitalised forms and workflows because this is the easiest way to communicate with customers, provide them with information and deal with their requests for services. Forms can be designed with a level of in-built ‘intelligence’ to collect appropriate and relevant information from customers and provide municipal employees with a complete set of data to speed up the handling of the customer's request.

This type of ‘smart form’ and fully or semi-automated processing is, however, only possible if supported by suitable information management and IT architectures (see the Smart Cities guide to *Creating Municipal ICT Architectures*, [www.smartcities.info/ict-architecture](http://www.smartcities.info/ict-architecture)).

## 5.2 Customer-centricity

Organisations can improve their customer service by:

- **eliminating** manual business processes wherever possible;
- **reducing** the complexity of service delivery through automation and 24/7 access, for example by integrating the municipal website with back office databases to show, for example, which kindergarten have available spaces;
- **increasing** the take up of services among key target groups and designing processes to meet the specific needs and/or expectations of these groups;
- making it **easier** to access services;
- providing **higher quality** services;
- developing '**customisable**' services which address the specific needs of individuals; and
- providing access to a **broad**er range of services.

These approaches look at services from the customers' perspective. Process innovation and e-service development seek to provide customers with 'more for less': more services and better quality with less time and 'pain' involved to access and receive the service that is requested.

The growing emphasis on e-services and digital processes to meet these customer demands is a win-win solution for municipalities. By increasing the take up of e-services and switching customers to more efficient, cheaper online channels, municipalities can improve their own internal efficiencies and reduce costs.

Business process improvement works hand in hand with customer focus; a process description, for example, can be compared with your strategy for customer access and your vision for the customer journey. This comparison will provide insights and help to formulate ideas about further improvements (see the Smart Cities Guide to *Customer Insight Profiling and Service Design*, <http://www.smartcities.info/customer-profiling>).

Identifying the many motives for process mapping is not just a fluffy, theoretical exercise, nor is it just a useful icebreaker for the mapping team. It is the most important activity at the beginning of the mapping exercise because it asks everyone involved in the mapping project the same questions at the same time and helps to identify the best employees to be involved, to contribute, to anchor and to approve the findings of the process map.

Process mapping is often performed in workshops. In these workshops sometimes “the outcome” (i.e. the process map itself) is the primary goal; sometimes “the journey” (i.e. the actual process of creating the map) is more important. Whether the mapping exercise is more outcome or process oriented depends on the motives for the project: is the organisation more interested in explaining, communicating, sharing, and learning; or is it more interested in changing the business process(es) under review?

Whatever your aim, it is essential that everyone involved in the mapping project discusses and decides (preferably in advance) what the benefits of process mapping could be and what the main use of the process descriptions (diagrams and/or scenario descriptions by text) should be. Descriptions of business processes could be used by a municipality to map out the specifications and requirements for an information system, or they could equally be used by systems suppliers to draw up specifications and designs for system solutions. Similarly, a process description may be used to assess the scope of an organisation’s IT architecture to meet business performance targets, to help inform purchasing and investment decisions for new e-service solutions, or be used as part of the design, development, testing, implementation, training, evaluation and maintenance of IT systems.

When employees understand how process descriptions will be used and how they will directly or indirectly benefit from process maps, they tend to be more motivated and committed to the project. Of course, the number of people actually involved in the mapping will depend to a large extent on the purpose behind it – whether that is gathering evidence for process improvement, assessing the compatibility of existing processes with available e-service solutions, or examining the attitudes of employees to change their work procedures and move to e-services.

The people who will be doing the process mapping need to understand the motives for the exercise and how its output will be used. Indeed, it is good practice to include incentives for the participants and to find ways to encourage their commitment. Participants must be able to answer the question “What’s in it for me?” so that they are willing to get involved in the process.

There may be a level of impatience among some participants who simply want to ‘get on with it’ and start the mapping work immediately. However, experience among Smart Cities partners shows that it is counter-productive to skip these initial steps in identifying and communicating project drivers and motivations. Without a clear understanding of the purpose of the project, many of the people involved will spend time creating process descriptions that are not fit for purpose and which will not be used.

Everyone participating in the mapping must be familiar with the basic concepts of process-oriented approaches, and have at least some basic process modelling skills. Past experience suggests the motivation step at the outset of the project requires only a small investment in time. A reference project, a common methodology and good examples may help to engage employees and increase the probability that the project will produce a high quality ‘transformational’ output. You are more likely to get high quality, well researched process maps when employees happily share their knowledge rather than when they participate simply “because they are told to”.

## 5.3 Scoping the project

Defining the scope of a business process mapping project must involve all the relevant stakeholders, who must first be identified during a preliminary pre-launch research phase. These stakeholders will include all the municipal departments involved in existing business processes or which are likely to be affected by any process changes, other organisations, customers and suppliers. It is only possible to get a full picture of a process if everyone affected is able to share their perspectives and knowledge.

The scope of the process mapping could focus on:

- internal processes;
- externally oriented processes involving an external client or supplier;
- processes across organisational borders;
- processes involving interactions and exchanges between stakeholders.

Smart Cities partners have learned through experience that the scope of process mapping projects tends to be poorly defined and poorly documented. The partners recommend that organisations begin with a stakeholder diagram (e.g. a SIPOC diagram) or text descriptions that highlight the main interactions between stakeholders (see Appendix 2 - Business Case Template for the customer profiling process - in the *Customer Insight Profiling and Service Design Guide* from Smart Cities at <http://www.smartcities.info/customer-profiling>).

These discussions about motives, the use of process descriptions and scope will first take place within the organisation's management team as they decide to implement a process mapping project. But the planning and scoping must begin well before the mapping exercise, because it is important to make the timeframe and budget for the mapping exercise clear from the outset – and you cannot establish timeframes and costs without having a clear idea of who will be participating, which business processes you wish to map and the possible scope of the improvements you wish to introduce following the mapping. Management will have to decide what it wants to know, what it wants to do and what it needs to get there (see Figure 5).



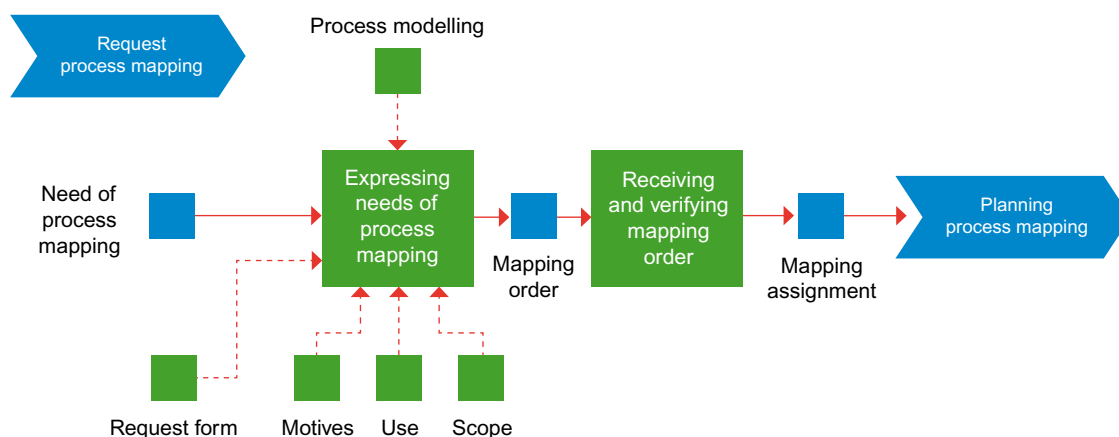


Figure 5. Work procedure – from identifying the need for process mapping to the mapping assignment

Once the mapping assignment is defined (which should involve some consultation with employees and other stakeholders) it is generally a good idea to take the discussion back to those steering process innovation to verify that the process mapping team and the scope of the project is correctly defined and to check that everyone knows their role in the project. As we have stressed before, it is vitally important to establish why process mapping should take place, so that the project is conducted efficiently and gathers the required knowledge of business operations in a way that yields useful process descriptions.

The Common Process Model that Karlstad municipality has developed supports this early step in processing mapping with a template request form which contains the following fields:

- Requester
- Motives for mapping
- Use of process descriptions
- Scope of processes to be mapped (organisations/administrations included in the mapping)
- Requirements for process documentation or process modelling
- Degree of detail in process descriptions
- Need for approval of/anchoring of process descriptions
- Time estimate for the mapping process
- Expected result to be submitted and to whom (role).

## 5.4 What and how to model, measure and re-design?

Once the motives for process mapping have been established and people understand how the resultant process descriptions will be used, it may be appropriate to document (i.e. to explain and communicate) or to model (i.e. to understand and improve) the processes themselves.

The introduction and upgrading of e-service solutions are constantly changing things for employees and customers. But it is important that these changes are for the better: the deployment of technological solutions without the background understanding of the processes behind them may not actually fulfil the organisation's goals to improve customer service and improve their process orientation.

Once a description of a current business process is available, it becomes possible to measure time and costs in the flow of information and activities, to monitor the quality of and access to information, and to survey customers on their experiences of the service. This data makes it easier to develop a specification for the design of an e-service solution that is "close to business".

Municipalities wishing to improve customer services may introduce complementary areas of analysis (e.g. stakeholders, goals, problems, strengths, information and concepts) in addition to the process map. They may also use customer and community profiling techniques, perhaps to use targeted marketing to encourage greater uptake of services or to get customers to use cheaper delivery channels.

Current and/or future processes are mapped in process diagrams and/or text descriptions as the basis for defining the end objectives: improving the performance and delivery of services.

## 5.5 Communicating process maps

The information gathered by a process mapping project, whether the description of an “as-is” process or a “to-be” process, can be communicated to customers and suppliers (for example a software vendor). But it is important that anyone using a process map is familiar with the notation and understands the process model and the language that is being used.

Although diagrams are an excellent way to visualise business processes and the flow of information through an organisation, they may not always be appropriate – the motives, use and context of the process mapping ultimately define the most appropriate communication methods.

The Common Process Model includes directions on how to describe an organisation’s processes in a consistent and standard way, using defined descriptors and a standard set of symbols and labels for all process diagrams.

The guidelines in the Common Process Model also highlight questions that must be asked during the mapping phase, along with advice on how to decide on what to measure, what to re-design and how to implement successful changes to established business processes.

Process descriptions (whether textual or diagrammatic) may have different levels of completeness, correctness and communicability; descriptions may therefore need to be revised or updated. Mapping participants and ‘process owners’ should be kept informed of any adjustments to process descriptions, as should anyone with the authority to approve changes to business processes. As each process description is anchored and approved, the next step is to store it as a core process description. It is clear that when a mapping project is planned, part of the project’s scope should cover how the process map will be kept up-to-date and maintained so that it becomes a ‘living document’.

The mapping assignment is completed once all the relevant process descriptions have been submitted, approved and published for the original requesters.

## Case Study – how Kortrijk made process mapping work

The city of Kortrijk in West Flanders has evaluated its recent process mapping projects and come up with a list of 'lessons learned' which will help it to improve future mapping projects:

- Process descriptions *per se* should not be the primary goal - the main focus should always be on how to improve customer service.
- Employees should first receive some general training about customer focus which should cover the municipality's goals for customer service, service levels, and targets for the use of different communication channels with customers.
- Once a process map has been published, employees should be trained in how to use product and process descriptions, not just how to create them. It must be made clear how these descriptions can be used to support the ambitions of the organisation and how they can improve the work of employees.
- Process descriptions should be simple.
- Process descriptions are a very useful way to clarify the roles of employees and of departments.
- The very process of producing process descriptions and the discussions the mapping process stimulates have an intrinsic value, no matter how good or how poor the final map actually is.
- Process maps should be stored in one place in a central repository, to avoid having different versions of the same process maps in use within an organisation.
- Administrative departments should work closely with IT staff.
- Three generic steps in every business process are the service request, request processing and service delivery.

The drivers for process mapping can vary considerably in scope and reach, so it is important to clarify what work is required for each mapping project in order to control staff time and costs and maximise the chances that the mapping has a direct influence on business improvement.

## 5.6 Map making

As process mapping work can vary in size and complexity, there are different “lines” to take through the Common Process Model. Green lines indicate simple processes i.e. “mandatory” tasks that are required to produce usable process descriptions. By following the green line you will produce a process description which can be readily communicated, and you will be able to identify how the process can be measured and improved.

Yellow lines in the Common Process Model indicate uncertain processes, while red lines show complex processes that cross organisational boundaries. The route taken by the mapping project will depend on the assignment and the specific goals of the business improvement programme. You may, for example, be able to explain the business by only using a combination of green and yellow lines, but by including the ‘red’ lines you may be able to develop a better understanding of the service delivery process.

As organisations gain experience in process mapping (via project reports), it should become clearer which directives, guidelines and templates (i.e. which colour line) should be followed for each new mapping exercise.

The green and yellow lines allow participants in the mapping exercise to:

- identify and describe processes by questioning the people who are involved with and familiar with the tasks and processes;
- make the project outcome-oriented – i.e. to produce a map which can be used for communication, testing and (re)designing processes;
- outsource the mapping to a consultant or contractor, or to work jointly with other representatives of the business; and to
- lock process descriptions to ensure that the map is based on accurate data.

The ‘red route’ in the mapping project enables participants to:

- consider and reflect on processes at different levels and from different perspectives (e.g. management, employee, learning, quality, political, IT) and assess them using different analytical approaches (e.g. goals, problems and strengths);
- generate different views of the same process for different audiences;
- focus more on the process of the mapping exercise rather than the output (i.e. “the journey is the goal”) which will produce a more nuanced and comprehensive understanding of processes, common understanding between stakeholders and participants, and help to simplify the work in the long run;
- outsource the mapping to a consultant or contractor, who will work with representatives of those who perform business processes and those who receive or consume the outcome of the process; and

- instigate robust approval systems for the process descriptions, so that they are clear for everyone and enable people to participate and get involved in business improvement initiatives.

Once you have fully agreed your motives for process mapping and decided on the scope of the project and how the output will be used, it is best to start along the ‘easy’ green and yellow lines, then move out to the red ones if this is appropriate. The importance of the different coloured pathways will depend heavily on the objectives of each individual mapping project.

Once you have described and identified how simple processes (green and yellow) can be improved, these results can be communicated and used to garner support and commitment for larger, more complex ‘red’ mapping exercises. Processes within and between departments and organisations are typically extremely complex, so using story-telling to highlight successes and the application of mapping to business improvement is an important motivational tool – you need good success stories before you decide to tackle the red lines. Despite the difficulties, Smart Cities partners have found that mapping teams like to follow the red lines, and these process maps are the ones that people remember. Of course, some employees like ‘talking’ and enjoy the task of process mapping, but everyone should be clear that the outcome of the project is action and improvement within the business.

## 5.7 The improvement challenge

Although process mapping can be a complex task, the real challenge is to use this knowledge to improve business processes. It is certainly difficult to improve a process for everyone – politicians, management, employees and customers – while working within typical financial constraints.

You should discuss with stakeholders how any improvements will be measured, how benefits will be quantified and how it will be decided if the goals of any changes in business processes have been met (e.g. is the business now meeting its political or statutory targets?). Table 1 (page 32) provides a non-exhaustive list of measurements that have been used by Smart Cities participants during their business improvement initiatives.

The use of explicit measurement and monitoring, either using a standard methodology such as lean or more locally defined performance indicators, has a psychological impact on departments and their employees. Knowing that their output and the performance of their processes are being measured, departments tend to be cautious yet committed. It is widely recognised that “what gets measured is what gets done”.

To measure improvement, you also need to have some baseline information, so you can compare old processes with new processes. It may be possible to use data from another municipality, perhaps an analysis of their existing e-service delivery, as a first step in defining local goals, targets and appropriate performance measures. Baseline data may also enable the municipality to identify its own strengths and weaknesses.

Not all measures have to be quantitative; it is also important to question customers to find out what they particularly like about a service. This can reveal quite different perspectives of how a process works, which may give some indication of how well the process is really working on a day-to-day level. Other questions to ask people could include:

- Is the process working?
- Does the process work if person X is not there?
- Do you think a process works in department A but not in department B?
- Why do customers complain about this process even though you feel it is working?
- Why are other departments which are not involved in this process complaining about it, even though (you feel) it is working?

Process monitoring is a very practical approach to assessing the ‘health’ of processes. It can produce valuable data that can identify which elements of a process should be prioritised for change or improvement. Smart Cities partners have all found that you can almost immediately identify improvements once you have modelled a process. Some improvements are easy to implement straight away, while others require larger scale projects.

Table 1. Examples of measurements in business processes

| External customer   | Result (products/services)           |
|---|--------------------------------------|
| Level of satisfaction   | Number of e-services                 |
| Treatment   | Use of e-services                    |
| Perceptions   | Number of complaints/reservations    |
| Experiences   | Number of cases/assignments executed |
| Customer benefits   | Quality of the case work/assignments |
| Supplier benefits   | Number of wrong deliveries           |
| Operational benefits  |                                      |
| Community benefits  |                                      |
| Value in use  |                                      |
| Process/flow  |                                      |
| Processing time for cases (from application to decision/action) |                                      |
| Lead-time (lean)  |                                      |
| Saved time/time gains   |                                      |
| Number of times the process is used                             |                                      |
| Response time for processing client requests                    |                                      |
| Calendar time from start to finish                              |                                      |
| Set-up time (lean)  |                                      |
| Significance  |                                      |
| Process capability (lean)                                       |                                      |
| Achievement of performance targets                              |                                      |
| Degree of flexibility/adaptability to changing circumstances    |                                      |
| Cost of resources   |                                      |
| Ability to follow-up  |                                      |



| Action  | Information (trigger/input/output)   |
|---|--|
| Value added (lean)  | Number/status of internal assignments  |
| Quality/level of performance                              | Number of applications/cases   |
| Level of achievement                                      | Number of notifications  |
| Level of management/paperwork                             | Number of file types/categories of cases   |
| Degree of revision  | Number of cases per year (in various categories)   |
| Management/assessment/performance of selections/decisions | Number of complete applications  |
| Number of decisions                                       | Number of correct registrations for online web account (access to all personal cases and applications) |
| Number of completions from customers/other stakeholders   | Number of errors/error rate in applications  |
| Number of reminders                                       | Number of places for storage   |
| Number of cases requiring further treatment/visit/action  | Number of decisions  |
| Cost per case/total per year                              | Use of documents/checklists/protocols  |
| Cost per activity and resource                            | Stored documents/checklists/protocols  |
| Level of cost effectiveness                               | Quality in answers/information   |
| Level of administrative costs                             |  |
| Waste (lean)  |  |

| Actor – employee (Role)  | Actor - system/IT                     |
|--|---------------------------------------|
| Level of satisfaction  | Number of channels used               |
| Existing skills/need for training                                | Number of services                    |
| Ability to follow up   | Number of digital forms used          |
| Opportunities for experience                                     | Frequency of use                      |
| Provides a basis for statistical analysis of service performance | Level of availability                 |
| Ability to use statistics/past experience                        | Degree of functionality               |
|  | Degree of retention of records        |
|  | Processing time (lean)                |
|  | Possibility for collecting statistics |

## 5.8 Support from management

Business process mapping should always be supported by the organisation's management team – you can only get things done (i.e. make business decisions) when management are involved as they have the authority to initiate improvement projects and to authorise budgets and resources. Management should work with others to address the what, why, who, when, where and how of any planned process improvement initiative.

By talking to the people who provide, perform, deliver and use a service you may be able to already identify potential areas to prioritise for process improvement. Questions to ask could include:

- Does our business follow regulations and environmental legislation?
- Can the process evolve?
- What does the customer take particularly “delight” in?
- What gives the customer tangible value?
- What are the business rules for the execution and performance of the process?
- Should the responsibility for activities be re-allocated/fixed?
- Can we prepare/handle/store/archive the information/documents/forms in a more efficient way?
- Are we missing any essential information/data?
- Are there similar processes in our operations that can be used as a reference?
- Is there a logic or flow which can be simplified?
- Are there any non-contributing activities?
- Will we offer added value to the customer?
- Are the customers happy with their role in the process?
- Can activities and flows be automated?

## Case Study – business process reviews in Edinburgh

As part of an initiative to achieve the UK Government Customer Service Excellence Standard, the City of Edinburgh Council's Revenues and Benefits Division (200 employees) has used an approach to business process review (BPR) that includes both customer journey mapping and lean methodology. A pilot project was led by an external consultant who transferred skills to internal staff; these individuals then carried out internal BPRs.

The council hoped that it could use the results of these BPRs to increase service efficiencies, reduce costs and to improve customer service.

The initial baseline data was compiled from complaints, processing and productivity output measures and by asking individual officers to produce a daily diary over a specified time period. These data sources were later re-analysed to assess how much progress was made by this improvement programme to redesign the Revenues and Benefits Division's processes.

The citizens of Edinburgh are benefiting from this programme and are experiencing a more efficient and effective service that can handle the changing circumstances of the city's residents. Changes in business processes have improved the customer experience, reduced the number of avoidable contacts and moved customer contact towards more cost-effective channels (e.g. online payment via WorldPay). In addition, public counter staff can instantly update the records of residents – they can, for example, apply discounts or exemptions to an individual's council tax account. This reduces the workload for back office staff and provides a swifter service and payment options for customers.

The City of Edinburgh Council has had to overcome a number of challenges associated with its BPR initiative. Many of the process improvements involved significant IT changes and support; these had to be implemented at the same time as other high priority projects. Although the initial projects that resulted from the BPR pilot delivered quick wins and some savings, further analysis is needed to determine to what extent their savings result from adoption of lean methodologies and process reviews.

The council has also found that monitoring and reports on changes and the implementation of new processes were not communicated in a consistent and standardised format. This made it difficult to compare the success of different projects, so an organisation-wide reporting system is now being developed. Finally, the Revenues and Benefits Division recognised that it is extremely difficult to expect staff to perform 'the day job' whilst also trying to implement process changes. The Division has now established a quality team to support the review process within teams, and to share its knowledge about lean amongst employees to develop a culture that embraces continuous improvement.

## 5.9. Business process maturity

The transition from an output-oriented organisation to a process-oriented one is gradual. A “process staircase” helps to illustrate how an organisation works through this transition and increases its level of process maturity (see Figure 6). By using a common process model, an organisation will increase its ability to produce process descriptions that will support its progression up the steps towards maturity.

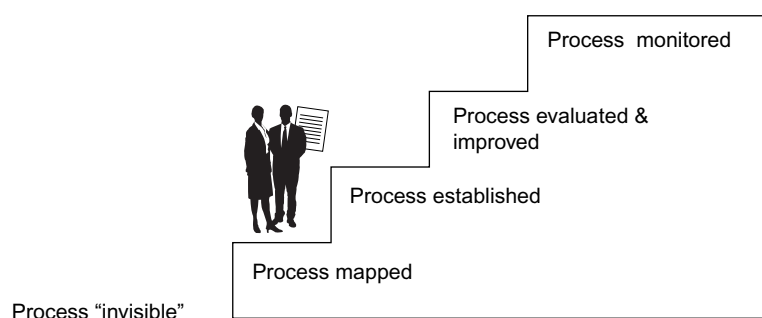


Figure 6. Degrees of process orientation

Mapping processes requires an organisation to first identify, then to describe its business processes. It is only when business operations are described in the form of processes that an organisation can really understand the processes that it actually uses. The process modeller will need guidance at various points in the modelling process and the project may require a team of people to take on different roles or who have different levels of modelling competence. At the end of a process modelling exercise you will have described all the elements of a business process – particularly from the perspective of the customer – but with an eye on the work of the whole business. Your results will be shaped by your organisation’s original motives for doing process modelling.

Once you have a map, you can then work to establish processes within the organisation. This is merely a way of formalising and documenting what already takes place. This step can mean that processes identified in the mapping exercise are labelled (i.e. given a name that is “close to its purpose in business” and which follows a convention so it is easy for employees to retrieve and access) and the process descriptions are saved, stored and made accessible to all the appropriate people involved in the process. Someone must also be given the responsibility for keeping the process description up-to-date.

In municipalities, it is useful to store one core process description (like a blueprint) which can then serve as a basis for different users, roles and target groups. A core process description will make it clear how the process may be measured and improved. It can also be copied and modified across the organisation, adapted for different target groups/roles, and adapted to address a process from the perspectives of different stakeholders. The process description may also be used by people who do not “think in boxes and arrows”. A useful process description can be used in communication and can be published across organisations and even made public for customers.

Once everyone is aware of the processes being performed in the organisation it is possible to conduct some performance evaluation. This analysis will gather various measures, metrics and quality indicators identified in the process description and provide a benchmark or baseline measure of the “as-is” performance. The data will also help to clarify what work is needed to improve the process to meet goals and targets. This evaluation can be conducted from the perspective of either the internal or the external demands on the performance and quality of operations.

A process can only be evaluated if it has suitable, defined and measurable indicators that allow performance to be compared and improvements inferred. Suitable indicators are included in the process description which will highlight which process elements to measure (what) and how these measurements should be taken depending on the scope and motives for the evaluation (why).

Monitoring processes is a continuous activity which generates information so that employees and systems know how well business operations are running and how they compare and fit within the organisation as a whole. Monitoring (and more specifically the publication of monitoring data) presupposes that management takes a horizontal or holistic view of the business; employees should be encouraged to use monitoring data and make decisions on how to improve the processes in which they are a part. In many cases the monitoring step (the measurement and gathering of performance data) is automated; software tools will support decisions about process improvement by highlighting problem areas and prioritising which elements or processes should be tackled first.

## Case Study – process mapping lessons from Lillesand

The municipality of Lillesand in Norway has evaluated a recent process mapping project and identified the following lessons:

- Following some pilot mapping, it became clear that it was important to develop and test a method for documenting, developing and improving municipal services through process analysis, service descriptions and the deployment of electronic work flows. The digitalisation of information requires the adoption of standards and management systems to maintain ensure high levels of organisation and quality.
- Resistance to change among employees is the biggest barrier to improvement. It is the responsibility of project managers and consultants to communicate with employees so that they understand the purpose, goals and methods of the mapping project. Good communication and consultation can transform initial resistance into a desire for change in work routines and a commitment among employees to take time to facilitate and contribute to the mapping processes.
- It is difficult to get people to switch from paper-based systems to electronic, online administration. Some degree of ‘marketing’ to customers to encourage them to use online systems may be necessary. Lillesand’s investment in raising awareness among target customers of electronic application procedures means that the municipality no longer receives any paper-based applications for services where online request systems are available (e.g. requests for day care, after-school clubs and job applications).

## 6. From processes to e-services

The Smart Cities project has found large variation in business process maturity between European municipalities. But the Common Process Model we have developed provides a clear and simple approach that should set municipalities on the path toward transforming themselves into process-oriented organisations.

The model makes it clear that an organisation must first identify why it wants this transformation and the motives behind its business improvement initiatives. Second, the organisation must capture knowledge about business operations from employees and customers through a business processes mapping exercise to get a 360° picture of what processes are performed by the organisation and how they affect the service or product a customer receives.

Process mapping produces detailed descriptions of every business process under scrutiny. These descriptions show how information and work flows can be measured, compared and, if necessary, redesigned.

It is good practice to make improved business processes transparent by publishing process descriptions; access (especially customer access) to these descriptions helps to empower stakeholders and bring them in line with the goals of the organisation.

The Common Process Model is flexible and easy to use and has been developed to allow organisations to map their business processes, the roles of employees and communicate how the organisation works. Some training in the basic principles of process orientation and reasonable skill at process modelling are required to ensure the quality and usability of process descriptions.

Process mapping is an important activity which provides factual support for management decisions on process-oriented business development, improvement and, in the case of municipalities, alignment of the organisation to political demands. Only with a broad, picture of the organisation's ability to deliver high quality services can a municipality really begin to improve its processes by adopting e-service solutions.

## 7. References

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### Smart Cities Guides

The Smart Cities project has produced a number of guides for municipalities and governments to help them design and deliver better e-services.

1. Customer Insight Profiling and Service Design Guide - <http://www.smartcities.info/customer-profiling>
2. Creating Customer Contact Centres - <http://www.smartcities.info/customer-contact-centres>
3. Creating Municipal ICT Architectures - <http://www.smartcities.info/ict-architecture>
4. Improving business processes and delivering better e-services - <http://www.smartcities.info/business-processes>
5. Using Co-design to design and deliver better e-services - <http://www.smartcities.info/co-design>
6. My City Online – making the case for municipal web portals - <http://www.smartcities.info/web-portals>
7. Using Geographic Information Systems to provide better e-services - <http://www.smartcities.info/gis>
8. An introduction to Municipal ICT Architectures for Managers - <http://www.smartcities.info/ict-architectureSmart>

