A GUIDE TO
PROCESS MAPPING AND IMPROVEMENT

Prepared by the CPS Activity Based Costing Team – December 2012
1. Introduction

1.1 CPS Areas are regularly required to examine their processes when working practices change. A key element of all process examination, or improvement, is the requirement to define the sequence of activities presently undertaken. This is a necessary step prior to any development of new working procedures.

1.2 This Guide aims to provide basic guidance and principles of process mapping, together with details of the key features of any process improvement exercise.

1.3 The Guide is based both on lessons learned from process mapping exercises where ABC staff have provided technical support, and an established formal Work Study technique known as “Method Study” where processes are:

- Selected
- Recorded
- Examined
- Developed
- Installed (Implemented)
- Maintained

This Guide concentrates on the Selection phase of existing processes through to Development of new processes.

1.4 Process mapping enables us to clearly and simply record existing processes, examine them thoroughly and develop improvements by:

- Eliminating unnecessary tasks
- Clarifying roles within the process
- Reducing delays and duplication
- Reducing the number of staff required

1.5 It can also assist in the creation and implementation of an effective process, often in partnership with the Police or any other agency, by:

- Identifying areas of duplication;
- Agreeing common processes;
- Improving the Police/CPS interface;
- Achieving maximum effectiveness in CPS/Police operations.
2. What is process mapping/flowcharting?

2.1 Flowcharts show people what their jobs are and how they should interact with one another as part of process. Everybody should be able to see from the chart what their job is and how their work fits in with the work of others in the process.

2.2 Processes are simply sequences of actions designed to transform inputs into outputs. For instance, baking a cake will involve taking various ingredients (inputs) and producing the cake (output) using the recipe (process). Similarly, the steps required to deal with a prosecution file from receipt to disposal will involve a process, or series of processes.

2.3 Process mapping is an exercise to identify, within a diagram, all the steps and decisions in a process. Process mapping -

- Describes the flow of materials, information and documents;
- Displays the various tasks contained within the process;
- Shows that the tasks transform inputs into outputs;
- Indicates the decisions that need to be made along the chain;
- Demonstrates the essential inter-relationships and interdependence between the process steps; and reminds us that the strength of a chain depends upon it’s weakest link

2.4 There are many different types of chart, each designed to capture particular aspects of work. However, for the purposes of this guide we concentrate on two of the most common techniques –

- Flowchart or Outline Process Map – which provides a basic ‘birds eye’ view of all the actions undertaken; and

- Deployment Charts – which not only provide the basic overview above but also indicate where or by whom the actions are performed.

These charts are explained in greater detail in Section 4.

2.5 It is important to remember that although there are many types of chart and numerous charting conventions, you should not be drawn into a technical maze. Make the charts work for you and keep them as simple as you possibly can. The primary objective is to make the chart as clear as possible, so that the process under review can be readily understood and improvements identified by almost anyone, even someone unfamiliar with the process.

3. Why process map?

3.1 Making system changes without truly understanding how the process is working today, and why, can lead to costly mistakes. It can also create
conditions that make it difficult for staff to work effectively, and often create further problems.

3.2 If you do not measure a process, you will not be able to manage it effectively and if you cannot manage a process, you cannot improve it.

3.3 It has been estimated that people working in organisations can waste about 15 – 20% of their time by re-doing things that are wrong, chasing things without result, querying incomplete instructions, doing other people’s jobs and so on.

3.4 Process mapping enables us to clearly define the current processes in chart form, identifying problem areas such as bottlenecks, capacity issues, delays or waste. Once identified, this knowledge provides a solid basis from which to develop solutions and introduce and plan new improved processes.

3.5 Process mapping enables an organisation to:

- Establish what is currently happening, how predictably and why;
- Measure how efficiently the process is working;
- Gather information to understand where waste and inefficiency exist and their impact on the customer or partners;
- Develop new improved processes to reduce or eliminate inefficiency.

4. Construction of Process Maps

4.1 Types of Process Map

There are two basic types of chart that you may find useful:

Process Flowchart

This chart simply sets out the sequence of activities and decision points. These are useful for capturing the initial detail of the process. Labels showing the grade/level of staff doing each step can be added if required.

Deployment Flowchart

This shows who does what along with the interactions between people and departments (e.g. between case preparation staff and witness warning staff or possibly between Police and CPS). This is sometimes known as a “swim lane” chart as the page is divided into lanes showing the various actions and how the process moves from person to person, or agency to agency.

*If your process mapping relates to CJS processes it is recommended that you adopt the “swim lane” format, to highlight the different actions taken by different sections within Police and CPS offices.*
4.2 Basic Flowcharting symbols

The two most important symbols are:

a) A rectangle, representing an activity or task:

b) A diamond, representing a decision:

c) You may also find it useful, when considering process improvement to label certain actions on your chart to highlight –

Delays

Transport/movement

Storage/Filing

4.3 Preparation for Process Mapping

a) Involve those who are familiar with the process. All the following could potentially be involved:

- Those who DO the work
- The SUPPLIERS to the process
- The CUSTOMERS of the process
- The SUPERVISORS / MANAGERS of the process

b) It is essential to involve operational staff in any process mapping exercise. Only by asking the people who do the work will you be able to effectively capture the information required. There may be some suspicion from staff about the ultimate aims of a process improvement exercise and how change will affect individuals. Communication and openness about the exercise, its aims and expected outcomes is therefore critical in reassuring staff and securing cooperation.
c) Assemble a small team ideally comprising representatives from ALL agencies or sections involved in the exercise, who have a good overview of the processes under examination. Key points to ensure are that:

- Terms of reference are agreed and clearly understood by all participants – what are we trying to achieve with this work?
- Sufficient time is provided to do the job properly – set sensible deadlines
- There is clear, visible Management commitment and support to the exercise
- All staff are made aware of the exercise, terms of reference and likely impact on them, together with an invitation to contribute or voice any particular anxieties
- Team members receive some basic guidance on process mapping/charting techniques
- Any available IT “experts” are utilised where required. Staff with good IT skills can assist in drawing up charts from handwritten drafts using either software charting packages or MS EXCEL.

d) If necessary “sell” the benefits of the process mapping exercise. Staff, supervisors and managers will need to be assured that the process mapping exercise will help them to work SMARTER rather than HARDER by enabling them to:

- Learn more about their processes by pooling their knowledge and working together to improve/adapt them
- Work out how to do their jobs to a consistently high standard without procedures being forced on them from above
- Visualise various kinds of changes likely to produce improvement
- Focus on the most troublesome aspects of their processes
- Demonstrate where processes fit into the overall system
- See where they as individuals fit into the overall system and to recognise their internal customers and suppliers
- Explain simply and easily the nature and detail of the processes to interested parties and new staff
- Identify any existing (and new) skills needed by those involved in the process
- Effectively help to plan implementation of proposed changes

e) Select and define the limits of the study

- Where will the study start and finish? For example, for the police START might be the receipt of a file from the OIC or the charging of a prisoner by CPS and END might be handing a final file to the CPS after review and rectification.
f) All parties should be clear and agree on what they wish to achieve through a process mapping exercise. It is unlikely that time and resources will permit a detailed examination of everything, and it may be sensible to identify key processes and concentrate on those.

4.4 Gathering information

a) If more than one agency or organisation is involved in the exercise, try to have a member of the OTHER agency who is familiar with the process under consideration present during process mapping sessions. This will give the other agency a 'hands on' practical understanding of your process and will hopefully, facilitate future stages when considering combined or improved processes. It can also be useful to have the “blindingly obvious” question posed by someone not too close to the process.

b) Observe the process in operation and talk to the staff involved. Walk through the process in sequence, asking how the work gets done. Try to obtain a clear overview without too much fine detail at this stage. If it proves difficult to get people to think sequentially it may help to ask the following types of questions at various steps in the process:

- What do you receive which prompts you to carry out your work?
- Where does your work come from? (Your SUPPLIER)
- What do you do with it?
- Where do you send your output? (Your CUSTOMER)
- What form does that output take? (This output then becomes the input for the next box (process step) in the flowchart)

c) Roughly and simply sketch the Process (without too much detail) describing the sequence of tasks and decision points as they actually happen. The sketch should indicate:

- WHO does WHAT (Job title / Function e.g. Level A1)
- WHAT is done and WHEN
- What DECISIONS have to be taken and
- What possible paths follow from each decision

d) It can be helpful to use 'POST-IT' notes on a large whiteboard (or just stick them on the wall!). Each note can represent a 'step' in the process and save a lot of pain when it comes to re-shuffling the sequence to get it right!

e) Draw the flowchart initially to represent the operation, as it actually happens - NOT what you might prefer it to be! Use a flip chart or whiteboard to produce your initial charts.

f) Keep it simple to facilitate broad understanding of the OVERALL process. Too much detail early on can be overwhelming and/or lead to confusion. If you
agree that more detail is required on a particular action, it is easy to highlight that box and produce a separate chart showing the process taking place within.

g) Leave the flowchart on the board / wall if possible. This enables reflection and re-thinking between meetings. Continue until consensus is reached. Rarely is the flowchart complete without re-work.

h) When you have an agreed final product it is time to document your work. There are numerous flowcharting packages available on the market such as “Visio”. Alternatively software such as Excel or PowerPoint can also be used to draw flowcharts.

The ABC Team may be able to offer some advice on how these packages can be used for flowcharting.

4.5 Constructing a Process Flowchart

a) Try to lay the sequence out by working in a downward direction rather than across. This will help later if you want to convert your process chart to a 'deployment flowchart'.

b) Having thought through the main 'steps' of the process, flowchart them in sequence as they are performed using rectangles for 'tasks' and diamonds for ‘decisions’. Use connecting arrows between boxes to represent the direction of the sequence.

c) Concisely describe each task or decision in its own box. You may sometimes wish to number (some of) the boxes and provide a key to where the activity is described in more detail.

d) If the process includes decision points, this will normally imply some 'return-routing' causing some boxes to have more than one input. In the example below the “return routing” or ‘loops’ indicate an inefficiency or waste.

e) Decisions often (but not always) pose questions answerable by YES or NO. It can be convenient to structure the questions so that the preferred answer is 'YES' whereas 'NO' leads to re-routing etc. In our example on the next page the most efficient process takes the form of a straight line down the page.

f) It is generally useful to map:

- The 'YES' route out of the bottom of the diamond (i.e. normal flow downward through the chart)
- The 'NO' route as a line out of the side of the box
A simple example

Simple Process Flowchart

4.6 Constructing a Deployment Flowchart

Here a “departmental” dimension is added horizontally along the top of the chart. You may use individuals, groups, departments, agencies, and functions etc - whatever kinds of 'units' play major roles in the process

a) Draw vertical lines to separate the functional boundaries

b) When the flow moves from one function to another, this is ideally denoted by a horizontal line.

c) Apart from these moves between functions, aim when possible to draw the sequence of activities from top to bottom.
d) Use the task and decision-making symbols as before and always connect symbols with arrows indicating the direction of flow. An example of a simple Deployment Chart is shown below.

Example of a Simple Deployment Flowchart

As refinements to the deployment flowchart, it may be useful at this stage to indicate any delays in the process, particularly at the interface or boundaries between agencies or sections.

5. Process Improvement

Critical Examination

5.1 Having selected and recorded key processes, the next stage is to critically examine them and develop new processes where necessary. This may well take
the form of combining, for example, existing Police and CPS processes and deciding who will take responsibility for various actions.

5.2 In many instances the thoughts and discussions required to chart existing processes will lead to easy identification of improvements. These should be noted and retained for the improvement stage. Many improvements will “leap off the page” once an existing process is charted.

5.3 Analysing your process maps in a structured way, known as Critical Examination, can identify process improvements. This basically involves the use of primary questions – WHAT, HOW, WHEN, WHERE, and WHO. Firstly define what is actually happening, (DOES), before moving on to identifying alternatives, (COULD), and finally deciding (SHOULD). The table below outlines the approach taken.

**CRITICAL EXAMINATION SUMMARY**

Examine your process maps and ask the following questions -

<table>
<thead>
<tr>
<th>PRIMARY QUESTIONS</th>
<th>WHY?</th>
<th>SECONDARY QUESTIONS</th>
<th>SELECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURPOSE – What is achieved</td>
<td>WHY?</td>
<td>What else could be achieved?</td>
<td>WHAT SHOULD be achieved?</td>
</tr>
<tr>
<td>MEANS – How is it achieved?</td>
<td>WHY THAT WAY?</td>
<td>How else could it be achieved?</td>
<td>HOW SHOULD it be achieved?</td>
</tr>
<tr>
<td>SEQUENCE – When is it achieved?</td>
<td>WHY THEN?</td>
<td>When could it be achieved?</td>
<td>WHEN SHOULD it be achieved?</td>
</tr>
<tr>
<td>PLACE – Where is it achieved?</td>
<td>WHY THERE?</td>
<td>Where else could it be achieved?</td>
<td>WHERE SHOULD it be achieved?</td>
</tr>
<tr>
<td>PERSON – Who achieves it?</td>
<td>WHY THAT PERSON?</td>
<td>Who else could achieve it?</td>
<td>WHO SHOULD achieve it?</td>
</tr>
</tbody>
</table>

5.4 In essence we should be asking:

- Why are we doing it?
- Is it essential to do this?
- Is there a better way of doing it?

In doing so you should also consider the:

- Implication of not doing parts of the process
• Impact on Customers/Stakeholders
• Why we needed the old process?
• What do we want to change?
• What are the requirements of the new process?
• What needs to change?

5.5 Rather than adopting the critical examination method and examining the whole process in the way outlined above, you may decide to focus on “wasted work”.

What is wasted work?

5.6 Wasted work is:

• spending time doing things again which have not been done right first time
• duplicating effort
• doing things that add no value to the customer or the organisation

5.7 Wasted work should be evident from your process maps, and often from any discussions you have with staff, when you:

• re-work something not done right first time
• complete unnecessary forms/paperwork/reports
• do not have access to the right equipment
• work from unreliable or inaccurate information
• deal with mis-routed phone calls or post
• do things that you’ve found others are doing/have done
• deal with problems caused by other departments not doing their job correctly first time
• encounter “bottlenecks” of work, or excessive delay/movement of work
• fire fight and deal with symptoms rather than causes
• have to obtain unnecessary authorisation
• attend unnecessary or poorly managed meetings
• have to handle issues that others should have dealt with

6. What are the characteristics of an efficient and effective process?

6.1 To help you identify some of the characteristics in an efficient process the following should always be apparent:

• several tasks/jobs combined into one
• workers making decisions at the lowest possible level and monitoring their own progress
• steps in the process following a natural order
• work being performed where and when it makes sense (with the fewest possible people involved)
• single points of contact and case managers
• the fewest possible interfaces and handling points
• the fewest backward movements
• the fewest possible activities

6.2 Having completed the initial process examination and improvement stage, you should be in a position to chart the new processes.

6.3 It is important to chart any new improved process that you develop as this can be used as a training aid for all staff and should clearly define who is responsible for each action. These charts should also form the basis of any future work aimed at improving processes further.

6.4 If the process examination covers more than one agency, an agreed combined process map may also be useful in supporting any Service Level Agreements which are developed by agencies for joint working.

6.5 It is also important to remember that a process mapping exercise as described in this guide is merely the first stage in a CONTINUOUS cycle of INCREMENTAL improvement and refinement of processes which is ultimately aimed at:

• eliminating duplication of tasks and reducing costs
• improving efficiency and co-ordination of working practices
• reducing the transportation of materials e.g. files between locations
• improving the quality and timeliness within the organisation
• improving the effective deployment of staff
• improving relationships between agencies e.g. Police, CPS and Courts
• reducing delays
• improving the service to victims and witnesses (or customers/stakeholders)

6.6 Process Improvement should be viewed as a continuous activity because the environment we work in within the CJS is constantly changing, not least through the impacts of Information Technology, and processes have to adapt with these changes.
7. Further Information

This Guide whilst addressing many issues that arise as part of a Process Improvement exercise may not cover items specific to individual Areas. The ABC team can offer further advice or information if required.

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