

KAY INITIATIVES LTD

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Process Mapping by Tube

Background

The inspiration for Process Mapping by Tube.

The first edition of the London Underground Diagram as we understand it today was published in 1933, and was the brainchild of Henry C Beck, a temporary draughtsman working for the London Underground Group. The style in which Beck chose to represent the various lines and stations, has remained in use ever since. Even the latest versions of the map, showing the Docklands Light Railway, riverboat and tram connections, are developed from his schematic interpretation of the network in the pre-war years.

The basic underlying concepts of Beck's design are a clear, lower case font, equally-spaced stations, lines running at 45 or 90 degrees to each other, and curved line connections rather than sharp corners.

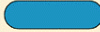
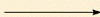

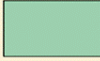
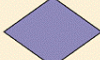
Periodically since then, London Transport has attempted to redesign the diagram using different concepts, none of which have lasted, the diagram reverting to Beck's themes every time. It has proved to be a design classic and a highly effective way of communicating its information to its readers. As the Underground network has changed over the years, it has also proved to be adaptable enough to allow new lines and stations to be depicted without compromising its clear lines.

To find out more about the origins of the diagram, the book to read is "Mr Beck's Underground Map" by Ken Garland (Capital Transport Publishing), ISBN 1854141686 – available from www.kay-uk.com/process_map.htm.

I first used Beck's concepts to document a process for initiating an information technology project in a UK organisation – in abbreviated form, it was known as the "Project Start Process". The process involved a number of steps from seeking management approval for the project, to obtaining a quote (via two different routes depending on the expected costs), to approving the spend, and authorising the project to commence. It was intended that this new process should be communicated clearly and be understandable to any non-technical or non-financial person who might have a need to raise a request for an IT project. Hence "Process Mapping by Tube" was born.

Using Beck's concepts in Process Mapping

The traditional flowchart used by organisations to show their business processes consists of rectangles, decision diamonds and start/finish circles with descriptive words placed inside them, all connected by thin lines with arrowheads showing the direction of flow (see diagram on this page).

Name	Symbol	Use in flowchart
Oval		Denotes the beginning or end of a program.
Flow line		Denotes the direction of logic flow in a program.
Parallelogram		Denotes either an input operation (e.g., INPUT) or an output operation (e.g., PRINT).
Rectangle		Denotes a process to be carried out (e.g., an addition).
Diamond		Denotes a decision (or branch) to be made. The program should continue along one of two routes (e.g., IF/THEN/ELSE).

Whilst effective in documenting a process, they can be daunting when used to describe a complex process to unfamiliar readers. In the case of my IT Project Start Process, the process was being implemented to prevent people trying to short-cut the approval mechanisms and try and get IT work done “on the side” or bundled in with some other already-approved work. The management did not wish to create any additional reasons for

by-passing the new process, and a traditional flowchart would have been a big turn-off for the expected non-technical audience of readers.

Hence I decided to adopt the London Underground Diagram concepts as described in the previous chapter, and use these to create a new type of flowchart that people would feel comfortable with, that was simple to follow, lent itself to on-screen viewing on the company intranet, and was compact enough to fit on one screen or page of paper.

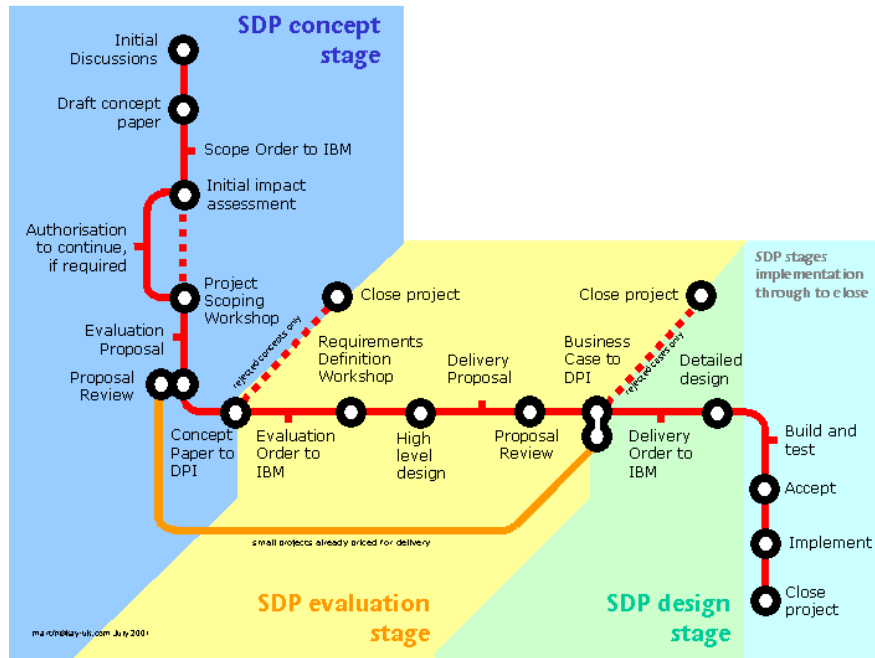
Remembering Beck's key design elements, I made sure that:

- Line widths and station circles and ticks were in the correct proportions
- Curved connections were used where lines join
- Lines were running only at 0, 45 and 90 degrees across the page
- There was equidistant spacing between stations
- Correct colours and an appropriate font were used.

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On this last point, the “New Johnston” font used in the traditional diagram is London Transport copyright and cannot be used elsewhere. However, Microsoft Windows Trebuchet and Verdana are good substitutes.

One of the many examples of this process diagram (the process was constantly changing!) is shown below.



Guide to element use

Stations

The appeal of the design would be lost if every station was a major interchange “circle” or a minor “tick”. I always start and end my diagrams with a circle (this ties in with traditional flowcharting practice) although most of the real tube termini are not interchanges (Cockfosters, Morden, etc.). However any point where the process divides, does require an interchange circle (in some cases, for clarity, a double-circle can be used). So once the start, end and interchanges have been established, most of the remaining stations on your process map can be “ticks”, although I often use interchange circles where there is a major step in the process that requires attention to be drawn to it. (You could look at these as invisible interchanges to other small processes that are not part of this diagram).

Station labelling

Always aligned so that the text is the same distance away from the line it is labelling (use a vertical or horizontal guide line placed a few millimetres away, to line up the letters, then remove it when you are done). Labels to the right should be left-

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aligned, those to the left should be right-aligned, and those above or below should be centre-aligned (wherever possible).

Lines

Ensure that the “track” line width is consistent throughout the diagram. Use broken lines for optional sections of the process (on the real tube map, dotted sections are part-time services).

Line labelling

On the real-life map, special instructions relating to a specific section of track (e.g. “Closed Sundays” or “peak hours only” are often placed running alongside it in a smaller font size. On the process maps, these labels are used directly after a decision point for the “yes” and “no” options.

Background

Normally white, but in the example on the previous page, colour bands were used to show how a separate business methodology used by the client, fitted in with this process. This is consistent with the use of “travelcard zones” as underlays on some versions of the real-life tube map.

Template sheet

Guidance notes

The file that accompanies this document, **tube-template.ppt** contains an example tube diagram and a selection of track pieces, which can be used to develop your own diagrams in Microsoft Powerpoint. This file is available for a small fee from the web site at www.kaywebs.co.uk.

Track lines

These are not lines but long, thin boxes – these were found to offer better connectivity to other elements.

Corner pieces

You are recommended **not** to use Powerpoint's auto-snap feature for connecting these up, simply because at these small sizes the connection does not always stand up to scrutiny. The best approach is to zoom in to 400% at the point you want to connect two pieces of track, and keep the “alt” button pressed while you accurately position the connecting pieces. If you try and resize the corner pieces by changing the radius of the curve, you might be lucky, but Powerpoint often does inexplicable things and the resulting curve shape may be uneven and unappealing in appearance.

Colours

Simply right click on any element and “format autoshape” to change the colour of a track piece. Stick to one colour per process, but where you are showing elements of other processes on the same diagram, use a different colour. Some examples of other frequently used colours are supplied.

Station circles and ticks

These are a black circle with a smaller white circle inlaid – when moving them, make sure you don't separate the two parts! Try and alternate station “ticks” on each side of the track wherever possible, it will give you more room for the text.

Text alignment and font

The tiny dotted lines on the template give you an idea of how you should be placing text adjacent to the track lines, remember to delete them from the finished article. Verdana or Trebuchet are good alternatives for the protected “new Johnston” font.

A word on intranet use

These diagrams come into their own when used on the company intranet. Users just click on the part of the diagram they are interested in, and up pops a window containing the process detail. There are as many ways in which this information can be displayed, as there are company intranets.

Kay Initiatives is available to help implement these process diagrams on company intranets, in accordance with organisational intranet page standards and style sheets. The diagrams themselves can also be adapted to prominently feature the company’s brand colours and fonts (although this will make them look less like traditional tube maps).

To find out how we can help, email martin@kay-uk.com or telephone us on UK +44 (0)1934 743469.