Data Analysis Summary

What is Data Analysis?
The successful development and implementation of a strategy requires problem solving techniques supported by data collection and analysis. Some of the data analysis will be complex and therefore any tools / techniques to simplify and trend the results will prove invaluable for the project team. Some projects may require more problem solving application than others due to the nature of the issues being addressed (i.e. establishing demand drivers), although managing gaps in performance against agreed targets will probably be applicable to all processes at some stage.

We have described activity analysis in a separate document, which proves a useful approach in understanding how resource, time and cost is apportioned in delivering a service / creating a product within a budget area, or across an organisation. The purpose of this overview is to provide analysts with other tools which engage key stakeholders directly in analysing data and establishing trends.

Data analysis builds a robust understanding of the current state (e.g. spend, suppliers, contracts) from which strong option development can be forged.

Where does it fit in with Category Management?
- Gathering data
- Analysing data and developing strategy options
- Establishing performance gaps and improvement plans (Managing Performance)

What is included in this guide?
- Value Stream Analysis / Mapping
- Wishful Thinking
- Customer Needs / Customer Voice table
- Needs Analysis
- Gap Analysis
- Pareto Analysis

Which processes does the tool apply to?
- Demand Management, SRM and Strategic Sourcing

Which other tools link to this guide?
- Brainstorming
- Cause and Effect Analysis
- Business Requirements / QCLDM
- Activity Analysis
- Process Mapping
Data Analysis

There are a number of tools described below – additional tools are included in the toolkit and are listed in various stages of the process. Tools which are essential at one stage may be useful at another and vice versa.

Value Stream Analysis

Value Stream Analysis or Mapping is a qualitative and quantitative tool that describes in detail how a process operates. It identifies how an end to end process delivers the value. This tool should be used to help visualise an entire process flow to enable understanding and analysis. The output(s) will enable the team to:

- Link activities and information
- Identify value add and non-value add activities
- Identify all associated documentation
- Work through opportunities for improvement and provide input to the business case for change
- Identify key decision points within the flow.

Step-by-step procedure

1. This technique is closely aligned with process mapping and the first step is to identify steps within the process. (See the process mapping tool for more detailed information.)
2. Layout the process clearly, for example, on brown paper.
3. Draw linkages within the process.
4. Identify linkages to other areas.
5. Obtain example documentation or templates for the outputs/supporting information.
6. Add metrics, for example, timings, capacity, changeover time, delays, inventories, volumes etc.
7. Flag opportunities and weaknesses and establish which process steps are value add vs. non-value add.
Example of a Value Stream Map

Wishful Thinking tool

The Wishful Thinking tool is a non-logical and unstructured method of ideas generation that may not be supported by more pragmatic-minded team participants. A logic-based approach however can often overlook new ideas or solutions to a problem, since any deviation from a more structured methodology is carefully avoided by many individuals. The Wishful Thinking tool provides a way to redefine a problem or situation, which is helpful in gaining new insights.

The Wishful Thinking tool can be used to:

- Produce some novel ideas.
- Find potential solutions to a problem.
Step-by-step procedure

1. The team defines a problem, issue or opportunity. The example given is “reduce demand for rail travel”.

2. The facilitator provides an overview and some examples of the wishful thinking tool and the team engages in discussion to ensure a shared understanding of the process involved.

3. Participants engage in fantasising and make wishful thinking statements such as:
   - “We would reduce costs if we could use new technology to convene and conduct meetings.”
   - “There would be less travel if staff were aware of costs across the organisation (communication).”
   - “It should be made easier to travel if deemed necessary.”

4. All statements are recorded on flip charts.

5. Next, participants examine all statements and discuss more practical applications. Back to reality questions are “How can we really do this?” “What exists today that we could use to respond to the concerns?” “What could happen if we try this idea?”

6. Steps 3 and 4 can be repeated after restating the problem, issue or opportunity.

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**Reduce demand for rail travel**

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Wishful Thinking</th>
<th>Back to Reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use new technology to convene and conduct meetings conferencing etc.</td>
<td>To Policy, video</td>
</tr>
<tr>
<td>Raise awareness of rail costs communicated</td>
<td>To Case for change</td>
</tr>
<tr>
<td>If we need to travel, we travel</td>
<td>To Clear policy</td>
</tr>
</tbody>
</table>

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**Customer Needs table / Voice of the Customer**

To understand how processes may need to change to reduce costs, but still meet customer needs the project team can use a tool called Customer Needs table or Voice of the Customer. This tool translates customer needs and wants into required designs that may meet customer expectations prior to the potential development of new products or service development.

The Customer Needs table helps the project team and stakeholders to:

- Identify customer needs and wants in a new service.
Translate the voice or customer information into design / change requirements.

Reduce the amount of change to requirements once the revised service is agreed.

**Step-by-step procedure**

1. The project team selects a methodology of collecting information about a proposed service.

2. Potential customers are randomly selected and questioned on the various listed characteristics and factors shown in the customer needs table.

3. All customer response data is organised and placed into the customer needs table as shown in the example below.

4. The table is reviewed by the team, dated, and presented to the process owners throughout the organisation.

**Hints and Tips**

- Examples of data collection methods include: customer surveys, interviews, focus groups, benchmarks, similar product data, summarised studies.

**Links with other key tools**

- Customer Needs Table must be completed with reference to the Business Requirements and consistent with the QCLDM Template.

**Example: Booking travel**

<table>
<thead>
<tr>
<th>Customer demographics</th>
<th>Customer needs / wants</th>
<th>Service usage</th>
<th>Mar 06</th>
<th>xx</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Who</td>
<td>What</td>
<td>When</td>
</tr>
<tr>
<td>1 F, 25, PA</td>
<td>Easy booking tool, clear policy.</td>
<td>PA</td>
<td>All travel</td>
<td>Anytime</td>
</tr>
<tr>
<td>2 F, 39, Manager</td>
<td>To attend fewer meetings, less travel, easy to book when needed.</td>
<td>Mgr</td>
<td>Rail travel</td>
<td>Anytime</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reworded needs / wants</th>
<th>Expected Quality</th>
<th>Cost</th>
<th>Ease of Use</th>
<th>Development</th>
<th>Management Info</th>
<th>Special Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Easy Operation</td>
<td>Simple, accurate</td>
<td>Range</td>
<td>Simple</td>
<td>Able to save profiles</td>
<td>No Errors</td>
<td></td>
</tr>
<tr>
<td>2 Meets offline needs</td>
<td>Quick</td>
<td>Budget</td>
<td>Simple</td>
<td>Works offline</td>
<td>Up to date info on schedules</td>
<td></td>
</tr>
</tbody>
</table>

HINTS AND TIPS:

- Examples of data collection methods include: customer surveys, interviews, focus groups, benchmarks, similar product data, summarised studies.

LINKS WITH OTHER KEY TOOLS:

- Customer Needs Table must be completed with reference to the Business Requirements and consistent with the QCLDM Template.
Needs Analysis
The primary goal of Needs Analysis is to determine what needs to be accomplished to close an existing gap between actual and desired performance. To adequately assess requirements, a systematic study of organisational processes, job performance tasks, and employee needs is performed to identify potential solutions and process improvements / changes to close gaps in performance.

Needs analysis will enable the project team to:

- Assess and develop solutions to close identified performance / demand gaps or discrepancies.
- Analyse the needs of the organisation – linked to Business Requirements.
- Study the organisation and its processes to determine what employees need to perform their jobs.

Hints and Tips
- Examples of data collection methods include: customer surveys, interviews, focus groups, benchmarks, similar product data, summarised studies.

Step-by-step procedure
1. The team establishes the goals for the Needs Analysis to be performed.
2. A plan is developed to acquire the data required to determine performance gaps and potential solutions. See the example “Reduce Business Travel demand”.
3. Team participants research, collect and analyse the data. Alternative solutions and process improvements are finalised.
4. A list of resource requirements is compiled for the recommended gap-closing and process-improvement activities.
5. A Proposal and action plan is developed and submitted to management.
Example: Reduce business travel demand

- Identify symptoms and evidence
- Clarify current policy and procedures
- State employees / business involved or affected

- Measure number of employees
- Quantify journey volumes by routes and business
- Quantify cancelled journeys and reasons

- Identify demand gaps
- Define actual volume
- Define desired volume

- Categorise policy deficiencies
- Determine organisational readiness
- Classify behaviour, motivation causes

- Improve processes and management reporting
- Redefine policy and procedures
- Communicate changes and support new way(s) of working

- Estimate the project cost of managing the change
- Determine work simplification savings and reduced demand
- Calculate cost of alternative technologies

- Describe cost benefits
- Estimate process improvement benefits
- List the benefits of more flexible working

- Evaluate and select the best solution
- Identify resource requirements
- Develop an action plan and schedule

Gap Analysis

The Gap Analysis tool is an ideal method to determine resources and action plans required to close a performance gap. When we apply these key principles to demand management the gap is identified as an outcome of comparing current state / processes to the desired outcome / performance by means of benchmarking, market research, or other results data comparisons.

Gap Analysis will enable the project team to:
- Analyse benchmarking gaps (differences).
- Provide input data for organisational change.
- Expedite data collection for planning process.
- Identify requirements for reaching future goals.

**Step-by-step procedure**

1. Prepare a gap analysis worksheet as shown in the example “Employee Training” below.
2. Fill in column (1), reflecting the present state of some actual performance data.
3. Indicate the desired performance, the Future State in column (2).
4. List all the necessary requirements in column (3) in order to move from the present state to the future state.
5. Under each listed requirement, identify all the resources needed to effect the change. This will feed into the stakeholder Responsible, Accountable, Consulted, Informed (RACI) analysis, implementation plan and communication plan for the project team.

**Example: Employee Training**

<table>
<thead>
<tr>
<th>Human Resources – Training and Development Section</th>
<th>Date: xx Mar 06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present State (1)</td>
<td>Requirements (3)</td>
</tr>
</tbody>
</table>
| 1. Lack of diversity training for the workforce | 1. Develop a diversity training program:  
• Conduct train the trainer sessions  
• Pilot the program  
• Verify resources required, budget, staff, schedule etc. | 1. Conduct diversity training for all employees |
| 2. Average training per employee is 12 hours / year | 2. Perform training needs analysis:  
• Identify training program and materials  
• Budget training  
• Establish a balanced training schedule | 2. Increase average training per employee to 24 hours / year |
| 3. Insufficient training staff – four trainers | 3. Hire 3 more trainers:  
• Place an ad for open positions  
• Set up and perform interviews  
• Make offer | 3. Augment training staff to seven trainers |

**Key point**
- All differences should be evaluated and prioritised for the development of an action plan.
- Gap Analysis can be applied to any performance activity improvement.
Pareto Analysis

The pareto principle, also often referred to as the 80:20 rule, suggests that a vital few factors are responsible for most results i.e. the majority of results (80%) have very few causes (20%). It enables the project team to identify and focus on those areas where there will be the greatest effect.

This tool should be used to help identify the issues to focus upon based on the assumption that these will be the greatest return for effort.

Pareto Analysis will enable the project team to:

- Get a list of areas / issues
- Decide which work will derive greatest benefit within the project.

Step-by-step procedure

1. Identify the scope of what you wish to analyse.
2. Establish what data is available and gain access to it.
3. Sort the data based upon the factor in which you are interested (in the following example this is Inventory Value).
4. Normally the top 20% (approx) will contribute to 80% (approx) of the cause e.g. 20% of items will contribute to 80% of the inventory value.

Example: Inventory Value

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Inventory (£m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>£32m</td>
</tr>
<tr>
<td>B</td>
<td>£4m</td>
</tr>
<tr>
<td>C</td>
<td>£2m</td>
</tr>
<tr>
<td>D</td>
<td>£1m</td>
</tr>
<tr>
<td>E</td>
<td>£1m</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£40m</strong></td>
</tr>
</tbody>
</table>
1 item (20% of items) contributes to £32m (80% of the total inventory value).

When deciding where best to focus effort, pareto analysis points you to item ‘a’ as any change will have a greater effect.