UNIVERSITY OF BIRMINGHAM

IT Services

Measuring the impact of Major Incidents

The immediate objective in handling Major Incidents is to restore service as quickly as possible and limit the impact to the University's business.

- How can we assess the cost of Major Incidents to the University when there is no clear way to assign financial costs to service outages?
- How can we capture intangible costs e.g. loss of University reputation?
- How can we compare outages across different services?

The method adopted by the University of Birmingham is to categorise the impact at the start of a Major Incident and use it as input into an overall measure of the service outage. This enables trend analysis over time, aids prioritisation of resources, provides evidence to obtain funding and demonstrates continuous improvement.

Categorising the Incident: The Impact Algorithm

The incident is scored against five criteria with each one ranked on a scale of 1 to 10, 1 being the lowest:

Client Ranking (CR)	who is affected – staff/student? eg: 10 = Vice-Chancellor (bomb alert with potential loss of life =10)
Business Function (BF)	level of University Business function affected. eg: loss of University website = 10. Loss of student printing services = 1.
IT Services (ITS)	what type and number of services are unavailable or affected. eg: loss of network infrastructure = 10, loss of individual system (eg printing)= 1.
Number of Clients (NC)	how many clients are affected? 1= less than 50, 2=50-99, 3=100-199, 4=200-299, 5=300-499, 6=500-999, 7=1,000-1,999, 8=2,000-4,999, 9=5,000-9,999, 10=10,000 or over (staff idle or sent home: add 5 to the score)
Image Factor (IF)	what is the potential impact on the external image of the University? (actual impact e.g. negative media reporting – add 10 to the score)

The rankings are added together to give a total score (max 50 points). Incidents which score less than 10 points are categorised as Minor, and monitored closely. They can be escalated to Major by the Incident Manager if they are not resolved or become worse.

Other scores are given the following initial status levels:

Score: 10-24=green, 25-39=amber, 40-50=red

Any score of 10 or more means there is a Major Incident. The only difference in the status is to whom the incident is escalated (GREEN -> Incident Manager, AMBER -> Director of IT, RED -> Senior members of the University). It is important that business owners of the service understand the colour coding in advance. Green does not mean everything is working, but the incident is being taken seriously.

Incidents are reviewed throughout and will be escalated as appropriate (Green -> Amber; Amber -> Red)

The impact algorithm is a guide but it may not be possible to assess the full impact at the outset to score it. This must not prevent action being taken to restore the service or communicate with users. The score can be determined later and may vary throughout the incident or depending on the time of year.

Examples of incidents and their approximate parameters are:

Example 1: ***network router fault causes loss of network in central administration:***

Client Ranking = 10, Business Function = 10, IT Services = 10, Number of Clients =4, Image Factor = 2.
Overall score = **36**

Example 2: ***all University Web pages unavailable:***

Client Ranking = 10, Business Function = 10, IT Services = 3, Number of Clients =10, Image Factor = 10.
Overall score = **43**

Example 3: ***departmental fileserver unavailable:***

Client Ranking = 7, Business Function =4, IT Services = 4, Number of Clients =3, Image Factor = 2.
Overall score = **20**

Example 4: ***Student PC cluster unavailable:***

Client Ranking = 3, Business Function = 2, IT Services = 3, Number of Clients =3, Image Factor = 1.
Overall score = **12**

Overall Measure of the incident: Impact assessment

Each Major Incident is assessed using the formula: incident score × number of hours affected

This produces the impact score, which of itself has no great value but can be used to compare very different incidents. For example, a network outage affecting most of the campus will rank 50, is normally dealt with very quickly, within half an hour – overall impact score of 25. Non-availability of a departmental fileserver may appear less significant, ranking of 20, but if restoration takes 4 hours will have an impact score 80. This gives a more accurate measure of the importance of the outage from the customer perspective and is monitored on a monthly basis – overall and by service.

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Benefits

- impact score supports investment in key areas
- impact score aids prioritisation of resources between competing areas
- downward trends in impact scores justify expenditure and demonstrate improvement
- improved understanding of business requirements and better relationship with customers
- improved understanding within IT Services and better cross- team working
- improved reputation of IT Services with our customer