

# The Cost of Downtime

## A practical guide

The financial cost of downtime is difficult to measure accurately and varies significantly between industry sectors; however a useful figure is quite easy to calculate.

## Introduction

Downtime in the context of IT Services is a period of time during which a service does not respond in accordance with its specification or an SLA (Service Level Agreement). This could be due to a failure, incorrect output or a performance problem. To quantify the impact on a business we must consider a range of factors:

### Tangible – easily quantifiable

- A fall in productivity
- A drop in production
- Lost sales
- Lost customers
- Employee churn – due to frustration with working environment
- Penalties incurred – due to defaults on obligations

### Intangible – difficult to quantify

- A negative impact on reputation
- Impaired share price
- A drop in employee moral
- Lost opportunities

The total impact is usually a lot greater than first assumed.

## The Issue

IT budgets are tight, particularly the amount allocated to IT Operations. By establishing the cost of downtime, options can be considered and justified, options such as:

- Increased Problem Management resource
- Secondment of internal IT staff to help with diagnosis
- Help from external Problem Analysts

If the Root Cause of a problem is also known, additional options become available such as:

- A cost-justified Service Improvement Programme
- Purchase of upgrades justified on a proven payback period

## Approach

This paper presents a straightforward and relatively simple approach to calculating the cost of downtime. The simplicity does lead to limitations, and it may be necessary to adjust the calculations to meet the particular needs of a business. The importance of each factor varies from industry to industry, for example:

- A real-time business such as a bank relies heavily on technology for online & customer services, business processing and trading
- A law firm uses IT to improve business efficiency and so downtime increases costs but the effects are not so immediate

Even with such limitation, the formulas provide a realistic starting point.

## Information Sources

The following shows the information needed and the potential sources. If the outage does not directly affect sales, items g, h and i are not needed.

### CostOfLostProductivity

a =	Business annual staff cost	HR or Annual Report
b =	Number of employees	HR or Annual Report
c =	Average days worked per year	HR or own terms or 222 days
d =	Average hours worked per person per day	HR or own terms or 8 hours
e =	Number of hours of downtime	Incident Report
f =	Number of staff affected	Service (or application) Concurrent User Stats or Service Agreements

### ValueOfLostSales

g =	Sales revenue	Sales or Annual Report
h =	Total number of sales per year	Sales or Web Stats
i =	Estimated number of sales lost due to outage	Sales or Web stats

### CostOfServiceRecovery

j =	IT Support hours worked	Incident Report, Time Sheets or estimation
k =	Fully loaded hourly cost of IT Support people	HR, IT Budget or £50 per hour

The data can be refined further if more detailed information, such as the annual cost of staff in a business unit or particular country is available.

## Calculations

$$\text{CostOfLostProductivity}(P) = \frac{a \times e \times f}{b \times c \times d}$$

$$\text{ValueOfLostSales}(S) = \frac{g \times i}{h}$$

$$\text{CostOfServiceRestoration}(R) = j \times k$$

$$\text{TotalDowntimeCost} = P + S + R$$

## Conclusion

Using easily attainable information for only the key factors involved, we were able to quickly and easily design a formula to then quantify the impact of a specific IT problem. The applicable options for resolution are immediately more apparent and a justification for an approach is considerably more advanced. Extend this further if necessary by adding more detail where applicable and substituting precise metrics where averages have been used. Support your case further with the inclusion of the relevant intangible factors.

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Advance7 offers a range of services to help you minimise downtime by fixing the underlying problems causing them.