

# The cost of **IT downtime** calculator

This calculator compartmentalises the financial and operational consequences of IT failure. Use it to improve the standard of business continuity planning around individual systems, and to better justify any future investment in disaster recovery technologies.





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What do disasters actually cost, when you strip away all the hyperbole of floods, fires and catastrophic failures?

For all their dramatic effect, those familiar scenes distract from the true cause of disruption during downtime: the failure of IT systems and the reduced productivity of the people that use them.

This calculator realigns disaster recovery planning with the way businesses actually experience disaster – that is, the failure of discrete IT systems that individually possess unique costs and challenges, too often disregarded by vague DR plans.

It also takes into account other peripheral and equally disregarded costs of IT downtime, such as regulatory penalties and customer defection to competitors as a consequence of interrupted service delivery. Peripheral costs can be just as damaging as decreased productivity – more so, in many cases – and it's essential to factor them in to your calculations.

## DEFINING DOWNTIME

Before we get down to arithmetic, it's important to set some constants. In this case, we need to define exactly what we mean by IT downtime.

Everyone defines downtime differently. For some, it means the complete blackout of a multitude of systems. For others, it simply means a sluggish Exchange server holding up email traffic.

This calculator assumes a cost-centric view of downtime, and so deals in absolutes: individual systems are either available or unavailable. It does not factor in the costs of, for instance, reduced system performance.

The calculator measures cost according to the standard measurement of one hour of downtime, with the caveat that costs become more complex the longer a system is down for, as we'll go on to explore.

Primarily, we'll investigate the two major factors that dictate the cost of IT downtime: when it occurs, versus the importance of the systems it affects. The accounting system, for instance, becomes much more essential during a busy period of billing than in the middle of the month. Conversely, if an online retailer's ecommerce platform goes down at any time, so does 100% of their turnover.

Downtime is chaotic and unpredictable. No calculator could generate the exact cost of IT failure. Instead, we can compartmentalise the types of cost that arise, the factors that most influence them and suggest ways to mitigate against them.



# The simple cost of downtime



Before we calculate costs around individual systems and people, we need a baseline for the whole business: the simple cost of one hour of downtime. Below are sample figures for average UK businesses. Fill in your own figures on the [next page](#) to calculate the simple cost of downtime.

## LOSS OF REVENUE PER HOUR

The cost of one hour of total IT downtime for the whole business consists of two primary factors: lost revenue and employee salaries.

Begin by dividing the total annual revenue by the number of hours in a year.

**Loss of revenue per hour**

<input type="text"/>	÷	<input type="text"/>
<i>Total revenue per year</i>		<i>Number of hours in the year</i>
= £		

## LOSS OF REVENUE PER WORKING HOUR

Of course, if your business only operates within standard office hours, an hour of downtime at 2:00pm on a Sunday is likely to cost very little. First thing on a Monday morning however, and the cost rises dramatically.

**Loss of revenue per working hour**

<input type="text"/>	÷	<input type="text"/>
<i>Total revenue per year</i>		<i>Number of working hours in the year*</i>
= £		

[\*40 hour week x 52 weeks]

## COST OF SALARIES PER WORKING HOUR

Next, calculate the total cost of salaries per working hour. When employees lose access to vital systems for extended periods of time, they cannot work effectively, so the organisation realises no value from its expenditure.

**Cost of salaries per working hour**

<input type="text"/>	÷	<input type="text"/>
<i>Total annual cost of salaries*</i>		<i>Number of working hours in the year</i>
= £		

[\*This figure is based on a company with 250 employees, paying the average British salary of £27,000 per year - sources: [Natal Office of Statistics, gov.uk](#)]



# The simple cost of downtime



Fill in the fields below with figures from your organisation to calculate the simple cost of one hour of downtime.

Loss of revenue per working hour	Cost of salaries per working hour	Simple cost of downtime per hour
$\left( \frac{\text{Total revenue per year}}{\text{Number of working hours in the year}} \right)$	$\left( \frac{\text{Total annual cost of salaries}}{\text{Number of working hours in the year}} \right)$	$= \text{£}$

This basic calculation is a good start, but it's a blunt instrument. These figures don't take into account more complex factors, like the cost of partial (as opposed to total) loss of productivity or the financial impact of reputational damage. They also assume that the cost of downtime accumulates linearly, hour-by-hour.

In reality, many businesses may not lose any revenue if systems go down for just one hour. A manufacturer of industrial machinery, for instance, would lose an hour of productive work time, but would almost certainly be able to delay any sales for the hour. Conversely, an hour of downtime during the Christmas period could be disastrous for an online retailer. We'll cover this in more detail on [page 7](#).

By splitting the consequences of technology failure into 3 categories, we can better understand its specific impact to the organisation as a whole.

1. The people
2. The technologies they use
3. The operational consequences of its failure

Cumulatively, these 3 categories provide a map of how and where the organisation depends on specific systems, in order to adequately offset the effects of their failure.



# The cost of downtime per department



The first way to break down the cost of downtime is to measure how failing technology affects individual departments. Some businesses take this approach to help prioritise the order in which they protect and recover business functions during DR invocation.

As before, we can measure this by calculating the total cost of salaries paid during periods of downtime and then adding the total revenue lost (i.e. the value employees would have otherwise delivered) – only now on a per-department basis.

## SALARIES

To begin with, let's break down the cost of downtime on a per-department basis, assuming that members of staff are either 100% productive or 0% productive based on the IT systems available to them.

First, calculate the cost of salaries per hour:

### Departmental cost of downtime per hour

<input type="text"/>	÷	<input type="text"/>
Salary cost of department-per-week*		Number of working hours per week
= £		

[\*If this isn't a figure you know you could use the average British salary of £520 per week x Number of people in department. For example £520 x 10 people = £5,200]

## REVENUE

Now account for the revenue directly lost by that department being unable to work.

To do this, estimate the proportion of total revenue that each department directly contributes, expressed as a percentage. Then multiply the percentage by the total revenue lost per hour.

The answers will differ significantly. Administrative and operational departments might be essential to the running of a business, but they don't tend to contribute significantly to revenue. Other departments, like the Sales team, contribute more - depending on the type of business, by as much as 100%.

### Revenue lost per team per working hour

<input type="text"/>	×	<input type="text"/>
Proportion of total revenue made by department		Loss of revenue per working hour
= £		





# The cost of downtime per department



## COST OF ONE HOUR OF DOWNTIME PER DEPARTMENT

Fill in the salary costs and revenue contributions for each department. The loss of revenue is automatically taken from the simple cost of downtime on page 4.

	Cost of salaries per hour		Proportion of revenue made by department in %*		Loss of revenue per working hour		Cost of one hour of downtime per department
Sales	<input type="text"/>	+	( <input type="text"/> × <input type="text"/> )	=	£		
Marketing	<input type="text"/>	+	( <input type="text"/> × <input type="text"/> )	=	£		
Operations	<input type="text"/>	+	( <input type="text"/> × <input type="text"/> )	=	£		
HR	<input type="text"/>	+	( <input type="text"/> × <input type="text"/> )	=	£		
Accounts	<input type="text"/>	+	( <input type="text"/> × <input type="text"/> )	=	£		
Other	<input type="text"/>	+	( <input type="text"/> × <input type="text"/> )	=	£		
						<b>TOTAL</b>	£

[\*Ensure the total revenue proportions add up to 100%]



# The cost of downtime per IT system



The cost of downtime per department is a useful way to frame IT failure in terms of the way it impacts revenue. Conversely, calculating the cost of downtime per IT system reframes costs in terms of the way they affect productivity. This method offers a more employee-centric roadmap to begin protecting against disaster, by focusing on the individual systems they rely on to work.

This comes with a few caveats.

## MULTIPLE FAILURES COMBINE IN UNPREDICTABLE WAYS

We must be mindful we cannot neatly add multiple costs together. If the Exchange server going down for an hour reduces productivity by 50%, and the CRM system going down for an hour reduces productivity by 30%, the combined impact is not an 80% reduction. In truth, it's probably much higher.

### 1+1 ≠ 2

Equally, if a system goes down for three hours instead of one, the cost is not simply cost per hour x 3. Try instead to anticipate the real consequences you might face with a service outage of that length. Catching up on missed work after one hour of downtime isn't too challenging. Extend that to three consecutive hours though and you could easily spend the rest of the day firefighting, pushing more work back to tomorrow.

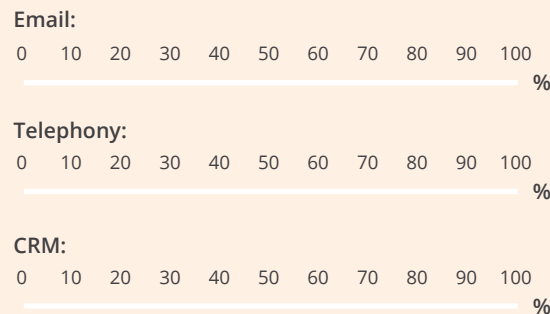
Equally, consult the peripheral costs section to factor in potential costs like penalties from regulatory bodies or dissatisfied customers.

## COST OF DOWNTIME PER IT SYSTEM

Estimate the degree to which each individual IT system would impact the productivity of the whole business for one hour of downtime.

### Example:

#### Productivity reduction by IT system



Then multiply that percentage by the simple cost of downtime. The figures below are samples based on average UK businesses. Use your own figures on the [next page](#).

### Example:

#### Cost of one hour downtime per IT system

**Email:**

×  = £

*Productivity reduction*      *Simple cost of downtime per hour*

**Telephony:**

×  = £

*Productivity reduction*      *Simple cost of downtime per hour*

**CRM:**

×  = £

*Productivity reduction*      *Simple cost of downtime per hour*

To account for systems that change in importance throughout the month, (such as billing) simply complete two calculations with different productivity modifiers – one for a high period and one for a low period.



# The cost of downtime per IT system



## COST OF DOWNTIME PER IT SYSTEM

Select the degree to which your productivity is reduced (i.e. you are 30% less productive) to calculate the cost of downtime per IT system. Your simple cost of downtime is automatically populated from page 4.

	Productivity reduction by IT system	Simple cost of downtime	Cost of one hour of downtime per IT system
Email	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
Telephony	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
CRM	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
ERP	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
Finance/ Payroll	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
Practice Mgmt System	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
Supply Chain Mgmt System	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
Remote Mgmt /Monitoring	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
File Store 1	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
File Store 2	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £
Internet Connectivity	0 10 20 30 40 50 60 70 80 90 100 % <input type="text"/> %	<input type="text"/>	= £





# Peripheral costs



Depending on the size of your organisation and the industry you're in, the legal and regulatory consequences of experiencing extended downtime can be significant.

Violating SLAs or losing sensitive data may mean anything from a direct financial penalty from a regulatory body to a key customer defecting to a major competitor.

Financial penalties don't always come in the form of legal obligations. Missed business opportunities can stack up very quickly because of downtime: most commonly due to lost credibility in the market or a lack of available resources to deliver services.

In other cases, customers may leave or defect to competitors, late-stage deals will falter and, in some cases, stock value will depreciate.

At the point of a disaster these can seem peripheral to the primary task of resolving the fault, but building in an expectation ahead of time can help to refocus the business on the real costs of downtime as it happens.

These costs can be the most difficult to calculate because they are regarded as intangible, so businesses regularly ignore them. Estimations are always preferable to ignorance, and it's advisable to take these "intangible" costs and turn them into something real that everyone in the business will understand. Our recommendation is to use

the cost of losing your customers as a baseline, with additional penalty fines applied as needed. Use the value of either an average or your largest customer as an example.

In the box below, a minor outage represents the cost of an average customer leaving, and a major cost represents one of your largest customers leaving. Calculate both to prepare your organisation for different eventualities.



## What's Next?

➔ Find out how Disaster Recovery as a Service can reduce the cost and impact of IT downtime.

