

# ServiceNow ServiceWatch<sup>™</sup> Economic Impact Study



## Executive Summary

Applications, databases, middleware, storage and networks are all directly involved in the service delivery chain. A problem with any of these components can impair the business service. To diagnose and resolve service issues quickly, IT staff need an accurate and up-to-date map of each business service, including all of the IT components that support the service and how they are related.

Today, enterprises are increasingly dependent on business services delivered by their IT organizations. These services underpin almost every business function, ranging from manufacturing and supply chain through to customer service and online sales. Because of their critical nature, business services need to be highly available and responsive – any disruption has a major financial and customer impact. For example, if an airline reservation system is down for as little as one hour, this can affect more than \$2 million worth of customer bookings. Even a more modest failure, such as an outage that prevents a limited number of employees from working, can result in costs in excess of \$30,000 per hour. This is in addition to intangible damages such as loss of customer goodwill.

### Business Challenges

While end users may perceive a business service simply as an application, each business service depends on a complex set of related IT components spanning multiple domains. Applications, databases, middleware, storage and networks are all directly involved in the service delivery chain. A problem with any of these components can impair the business service. To diagnose and resolve service issues quickly, IT staff need an accurate and up-to-date map of each business service, including all of the IT components that support the service and how they are related. Without this, efforts to resolve serious business service issues often degenerate into unproductive war-room finger-pointing between individual domain experts.

However, traditional manual methods of mapping business services have proven ineffective and costly. Based on feedback from ServiceNow's clients, the average time to map a single business service is 2 weeks. There is also a further 25% annual maintenance overhead for service maps due to ongoing IT infrastructure changes. Since a typical enterprise may have more than 100 business services, this represents an unsustainable cost and time overhead. As a result, industry studies have shown that only about 2% of business services are currently mapped.

Furthermore, traditional service mapping approaches are becoming useless due to the accelerating pace of IT change. Increasing demands for new business services, technologies including virtualization and cloud, and new organizational paradigms such as DevOps all drive daily change. Manual mapping approaches are unable to keep up, resulting in inaccurate and out-of-date service maps. This has two major economic effects. First, it takes longer to resolve service issues, resulting in more downtime and associated losses. Second, because change planners do not have service visibility, they are unable to validate whether changes will affect services. This leads to increased change-related incidents – a disturbing trend given that change is already the biggest cause of business service problems.

### Purpose of This Study

This study evaluates the positive economic impact of ServiceNow ServiceWatch in four key areas:

- Reduction in the effort needed to create service maps for critical business services.
- Reduced ongoing service map maintenance effort as a result of automated map updates.

The data used in this study was gathered from multiple ServiceWatch customers and prospects over a one-year period. In all cases, conservative assumptions have been made for average values.

In addition, this study also identifies a number of additional ServiceWatch benefits that have not currently been quantified.

- Reduction in change-related incidents due to improved service visibility during change planning.
- Faster service issue resolution and reduced downtime due to better root cause analysis.

### Methodology

The data used in this study was gathered from multiple ServiceWatch customers and prospects over a one-year period. In all cases, conservative assumptions have been made for average values. For example, the reported downtime cost of a single mission-critical business service exceeded \$1 million per hour in several instances, but a conservative figure of \$30,000 per hour has been used to exclude outlying cases.

In addition, this study also identifies a number of additional ServiceWatch benefits that have not currently been quantified. These benefits are not included in any of the economic impact values provided – as such, they represent additional upside to the results presented in this study.

### Results

The results of this study are shown in the tables below. Two different cases are included, representing enterprises with 50 and 100 business services. A detailed explanation of each of these results can be found in the main body of the study.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Service Mapping	445,109	0	0	0	0	445,109
Map Maintenance	60,054	120,109	120,109	120,109	120,109	540,490
Reduced Number of Outages	52,500	105,000	105,000	105,000	105,000	472,500
Reduced Service MTT-Restore	24,375	48,750	48,750	48,750	48,750	219,375
<b>Total</b>	<b>582,830</b>	<b>273,859</b>	<b>273,859</b>	<b>273,859</b>	<b>273,859</b>	<b>1,677,474</b>

Model 1: Economic Impact with 100 Business Services (\$US)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Service Mapping	222,555	0	0	0	0	222,555
Map Maintenance	30,027	60,055	60,055	60,055	60,055	270,245
Reduced Number of Outages	26,250	52,500	52,500	52,500	52,500	236,250
Reduced Service MTT-Restore	12,187	24,375	24,375	24,375	24,375	109,697
<b>Total</b>	<b>291,019</b>	<b>136,930</b>	<b>136,930</b>	<b>136,930</b>	<b>136,930</b>	<b>838,737</b>

Model 2: Economic Impact with 50 Business Services (\$US)

With ServiceWatch, ServiceNow's clients report that the time required to map a service is an average of 12 hours. This includes all the preparatory work required – the actual mapping process is much shorter.

## Key Assumptions

This analysis makes the assumptions shown in the table below, all of which have been extensively validated with ServiceNow's client base over a period of one year prior to this study. The assumptions used are conservative and exclude outlying values that could overstate the benefits of ServiceWatch.

Category	Item	Assumption
Cost of IT resources	Loaded labor rate per IT employee	\$130,000 per year
	Hours worked per IT employee	1,840 per year
Manual service mapping effort	Initial service map creation	75 hrs. per service
	Service map maintenance	20 hrs. per service per year
ServiceWatch service mapping	Initial service map creation	12 hrs. per service
	Service map maintenance	3 hrs. per service per year
Average cost of service outage	Per minute	\$500
	Per hour	\$30,000
Downtime before ServiceWatch	Services experiencing outages	10% of services per year
	Average MTTR for service outage	60 minutes
Downtime with ServiceWatch	Reduction in number of outages	35%
	Average MTTR for service outage	45 minutes

## Analysis by Impact Area

### Service Mapping

Based on feedback from ServiceNow's clients, the average time required to map a business service using traditional manual methods is 75 hours. They point to a number of reasons for this, including absence of pre-existing documentation, the need to interview numerous stakeholders and domain experts, lack of cross-domain expertise, difficulty tracing services across shared infrastructure, and the need to go through multiple iterations before a fully validated map is produced. They also lack the ability to determine how virtualized infrastructure supports delivery of a given business service.

With ServiceWatch, ServiceNow's clients report that the time required to map a service is an average of 12 hours. This includes all the preparatory work required – the actual mapping process is much shorter. This represents an 84% reduction in service mapping effort. This is due to ServiceWatch's top-down mapping approach, as well as its built-in knowledgebase. Because ServiceWatch has the intelligence needed to trace services across domains and through shared and virtualized infrastructure, there is no need for expert inputs during the mapping process. This also allows clients to use less experienced staff for mapping services – a positive factor that has not been included in this analysis.

ServiceWatch automatically tracks changes in service maps as they occur by continuously monitoring the underlying IT infrastructure. It detects moves, adds, changes and deletions, as well as changes in the relationships between IT components – including in virtualized environments.

Based on this reduction in effort, and taking into account the average cost of IT staff, the cost savings per business service are shown below:

Manual mapping cost:                    hours x hourly IT labor cost = 75 x \$130,000/1840 = **\$5,299**

ServiceWatch mapping cost:    hours x hourly IT labor cost = 12 x \$130,000/1840 = **\$ 848**

Cost savings per business service = **\$4,452**

This saving per service translates into the following economic impact over a five-year period for 100 and 50 business services respectively. The figures below assume that all services are modeled within one year. However, many organizations would struggle to map 100 services in a year using traditional manual methods. To do this, they would need to assign 4 full-time IT resources, as compared to 0.7 with ServiceWatch.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
100 Business Services	445,109	0	0	0	0	445,109
50 Business Services	222,555	0	0	0	0	222,555

Map Maintenance

Once a service has been mapped, the map needs to be updated every time there is an infrastructure change that affects the service topology. Based on feedback from ServiceNow’s clients, the average amount of time required to maintain a service map using manual methods is 20 hours per year – and the accuracy of the map still tends to diminish over time.

ServiceWatch automatically tracks changes in service maps as they occur by continuously monitoring the underlying IT infrastructure. It detects moves, adds, changes and deletions, as well as changes in the relationships between IT components – including in virtualized environments. Because of this, the average maintenance effort with ServiceWatch is approximately 3 hours per year as opposed to 20 hours.

Manual maintenance cost:                    hours x hourly IT labor cost = 20 x \$130,000/1840 = **\$1,413**

ServiceWatch maintenance cost:    hours x hourly IT labor cost = 3 x \$130,000/1840 = **\$ 212**

Cost savings per business service per year = **\$1,201**

ServiceWatch identifies all of the business services that depend on any single IT component. It also shows all of the dependencies between components, allowing planners to deal effectively with the impact of cascading changes.

This per service saving results in the following economic impact over a five-year period. The figures below assume conservatively that only 50% of the benefit is recognized in the first year.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
100 Business Services	60,054	120,109	120,109	120,109	120,109	540,490
50 Business Services	30,027	60,055	60,055	60,055	60,055	270,245

### Reduced Number of Outages

The single largest cause of business service issues is change in the underlying IT infrastructure. While this is due in part to unplanned change, planned changes also have a significant impact on business services. Unless change planners are able to accurately assess the impact of changes on service delivery, they run the risk of creating significant service disruptions when these changes are made. To avoid this problem, they need an up-to-date and accurate set of service maps.

ServiceWatch provides these maps, allowing change planners to understand which IT components need to be changed together to maintain service delivery. ServiceWatch identifies all of the business services that depend on any single IT component. It also shows all of the dependencies between components, allowing planners to deal effectively with the impact of cascading changes. Because of this, organizations typically report a 35% reduction in outages once they have deployed ServiceWatch.

Assuming that an average business service outage costs \$30,000 per hour and that the average MTTR is one hour, this means that the average outage costs \$30,000 – a very conservative estimate based on client feedback. Assuming that 10% of business services experience an outage each year, this leads to an average outage cost of \$3000 per business service per year. The 35% reduction in outages seen with ServiceWatch therefore results in an average saving of \$1,050 per business service per year as shown below.

Annual savings per service: cost x % outages x % reduction = \$30,000 x 10% x 35% = **\$1,050**

This per service saving results in the following economic impact over a five-year period. Once again, the figures below assume that only 50% of the benefit is recognized in the first year.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
100 Business Services	52,500	105,000	105,000	105,000	105,000	472,500
50 Business Services	26,250	52,500	52,500	52,500	52,500	236,250

While ServiceWatch reduces the number of business service outages, it also reduces the amount of time needed to fix remaining service issues.

### Reduced Service MTT-Restore

While ServiceWatch reduces the number of business service outages, it also reduces the amount of time needed to fix remaining service issues. A very conservative analysis of feedback from clients indicates that the MTTR is reduced by a minimum of 25% – or 15 minutes for an average one-hour outage. However, this is likely a significant underestimate, since ServiceWatch in many cases has eliminated hours of investigation and root-cause analysis when applied to seemingly intractable service issues.

The reductions in MTTR with ServiceWatch are a result of two separate capabilities. First of all, ServiceWatch allows IT staff to trace the cause of service issues across domains down to the subcomponent level. Second, ServiceWatch correlates service issues with changes in the underlying IT infrastructure, so that IT staff can quickly identify whether a particular change – including an unplanned change – has caused a service outage.

This reduced MTTR results in an average economic impact of \$488 per service per year, taking into account that 35% of outages have already been eliminated – only 6.5% of business services experience outages with ServiceWatch, as compared to 10% without ServiceWatch.

Annual savings per service:  $\text{cost} \times \% \text{ MTTR} \times \% \text{ outages} = \$30,000 \times 6.5\% \times 25\% = \text{\$488}$

This per service saving results in the following economic impact over a five-year period. Once again, the figures below assume that only 50% of the benefit is recognized in the first year.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
100 Business Services	24,375	48,750	48,750	48,750	48,750	219,375
50 Business Services	12,187	24,375	24,375	24,375	24,375	109,687

### Unquantified Benefits

In addition to the quantified benefits included in this study, ServiceNow ServiceWatch also delivers a range of other benefits. These include but are not limited to the following:

- The ability to use less experienced and less expensive staff to carry out service mapping.
- Proactive detection and correction of unplanned changes before business services are affected.
- Identification and resolution of potential infrastructure issues before any adverse business impact.
- Better optimization of business services and supporting infrastructure during data center migration.
- Accelerated change approval due to accurate service impact analysis.
- More efficient and timely confirmation that changes have been executed correctly.
- Improved business continuity planning and more accurate configuration of backup data centers.
- Infrastructure cost savings through identification of stranded resources that do not support services.



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