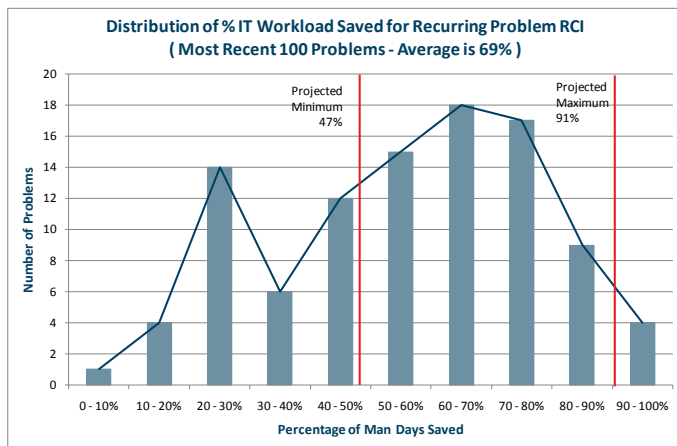


## RPR<sup>®</sup> Statistics

Advance7 has conducted research to project the savings that can be made through the use of the RPR problem diagnosis method. One hundred real-life RPR investigations were analyzed and a conservative approach was taken to determine the minimum projected cost and capital expenditure savings.

### IT Workload Reduction

The figures here show how RPR cuts the number of man days of effort used by IT support to determine the root cause of a recurring problem. These savings were determined by the analysis of 100 problems initially investigated through traditional methods and then investigated using the RPR method.



**Figure 1 – Reductions in Support Man Days**

The chart above shows the distribution of IT support man days saved through the use of RPR. The categories along the x axis relate to the percentage reduction in IT support man days achieved i.e. 0 to 10%, 10 to 20%, etc. The values on the y axis show how many of the 100 problems fall into each category. For example, 18 problems benefited from a saving of 60 to 70% in man days of IT support effort.

The projected minimum reduction in IT workload is **47%**, giving:

$$\text{Min Reduction in IT Workload} = 0.47 \times \text{Support Man Days}$$

where *Min Reduction in IT Workload* is the projected minimum number of days that could be saved within the IT department through the use of RPR and the *Support Man Days* is a total of the man days currently spent by IT support people in diagnosing recurring problems.

#### Example

Over the last 12 months IT Operations opened 100 Problem Records, 40 of which were for recurring problems, of which 35 required detailed investigation by several IT support functions. An average of 45 man days of IT Support time was spent on each of the 35 problems.

Therefore, had RPR been used to investigate the 35 problems:

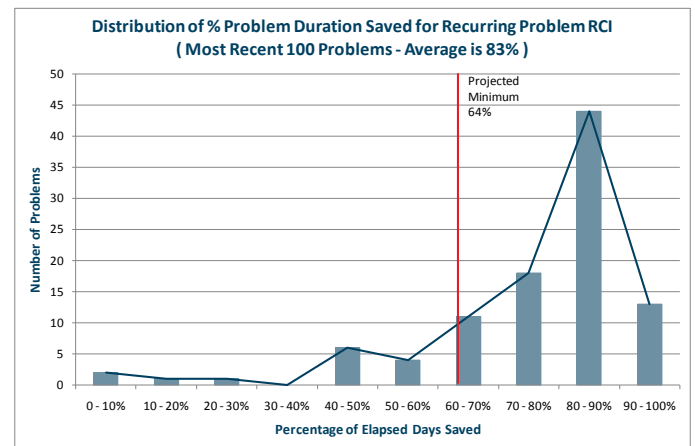
$$\begin{aligned} \text{Min Reduction in IT Workload} &= 0.47 \times 35 \text{ probs} \times 45 \text{ man days/prob} \\ &= 740 \text{ man days} \\ &= \underline{3.3 \text{ man years p.a.}} \end{aligned}$$

Assuming the fully loaded cost of an IT support person is £100k p.a.:

$$\begin{aligned} \text{Min Potential Cost Savings} &= 740 \text{ man days} * £444 / \text{day} \\ &= \underline{£328,560 \text{ p.a.}} \end{aligned}$$

### Business Productivity Gains

In this section we look at how RPR can improve the productivity of the business. Loss of productivity occurs when a service is unavailable, slower than normal or producing errors. Cutting the time taken to resolve recurring problems therefore reduces loss of productivity across the business.



**Figure 2 – Reductions in Problem Duration**

The chart above shows the distribution of reductions in problem duration achieved. The categories along the x axis show the percentage reduction in problem duration achieved i.e. 0 to 10%, 10 to 20%, etc. The values on the y axis show how many of the 100 problems fall into each category. For example, 44 problems benefited from a saving of 80 to 90% in problem duration.

The projected minimum reduction in problem duration is **64%**, giving:

$$\text{Min Productivity Gain} = 0.64 \times \text{User Days Lost}$$

where *Min Productivity Gain* is the projected minimum number of days that could be saved across the business through the use of RPR and *User Days Lost* is the total lost working time in the business due recurring problems.

#### Example

A problem manager reviewed 35 recurring problems that required investigation by several IT support functions. He found that on average each took 40 working days to diagnose and caused 200 people to lose 15 mins per day (or 0.25 hours) of productive working time.

Therefore, had RPR been used to investigate the 35 problems:

$$\begin{aligned} \text{Min Productivity Gain} &= 0.64 \times 35 \times 40 \times 200 \times 0.25 / 8 \text{ hrs/day} \\ &= 5,600 \text{ man days} \\ &= \underline{24.9 \text{ man years p.a.}} \end{aligned}$$

Assuming the average fully loaded cost of a staff member is £50k p.a.:

$$\begin{aligned} \text{Min Potential Cost Savings} &= 4,200 \text{ man days} * £222 / \text{day} \\ &= \underline{£1,243,200 \text{ p.a.}} \end{aligned}$$

## MTTR

Research carried out by Ziff Davis<sup>1</sup> shows that on average 80% of the time spent resolving IT problems is related to identifying root cause.

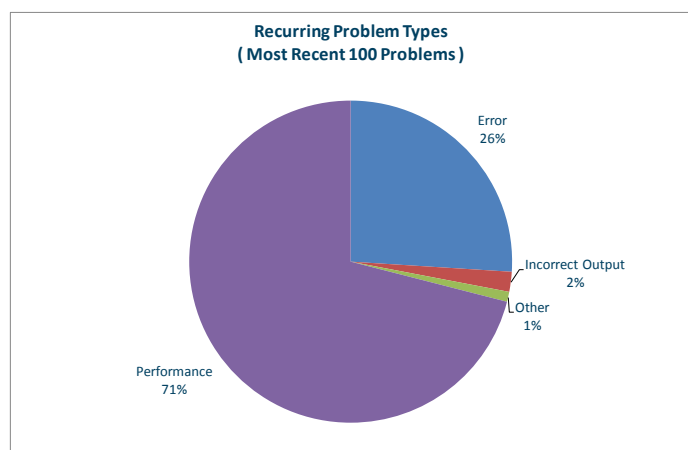
Therefore, the expected reduction in Mean Time To Resolution (MTTR) through the use of RPR is given by the formula:

$$\text{Reduction in MTTR} = 80\% \times 64\% = 51\%$$

## Capital Expenditure Savings

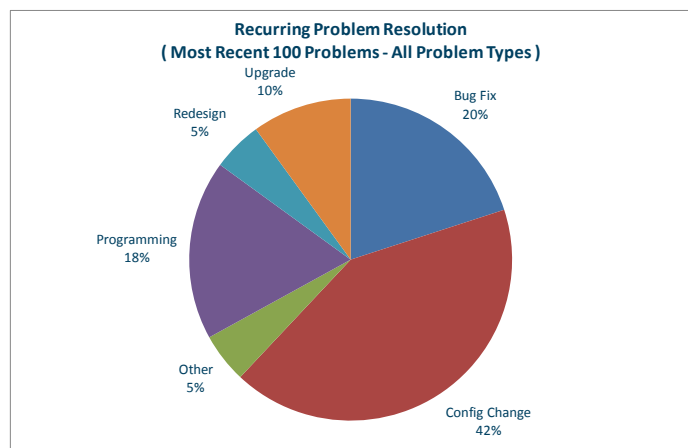
This section covers the potential savings in expenditure on upgrades and Service Improvement Programmes related to recurring problems.

The figures here relate to a wide range of problem types and technologies.



As the chart above shows, the majority of recurring problems are performance related, and these are also the most difficult to diagnose.

By determining the proportion of these problems that required an upgrade to resolve them it is possible to indicate the expected rate of capital expenditure for recurring problems.



The above chart shows that only 10% of recurring problems required an upgrade to resolve them. What's more, had cap-ex been spent trying to resolve the other problems the money would have been wasted.

To allow for an element of variation between projects the norm for upgrades is taken as double the value shown in the chart i.e. 20%.

To determine the cap-ex potential savings through the deployment of RPR some information must be gathered:

- The total number of recurring problems resolved
- The number of recurring problems that resulted in an upgrade or a Service Improvement Programme (SIP)
- $u\%$  - Express number of upgrades and SIPs as a percentage of the total number of recurring problem solved e.g. 300 recurring problems were resolved last year and 180 resulted in an upgrade or SIP giving a rate of 60%
- $RpCapEx$  - The total expenditure on upgrades and SIPs to resolve recurring problems

The projected savings are then determined using the formula:

$$\text{RpCapEx Saving} = \frac{(u\% - 20\%) \times RpCapEx}{u\%}$$

where  $RpCapEx$  Savings is the total capital expenditure related to recurring problems that can be saved through the use of RPR.

### Example

A problem manager reviewed 35 recurring problems and found that 19 of them (or 54%) had resulted in capital expenditure totaling £3.2m. There was no proof that any of the upgrades purchased had been solely responsible for the resolution of the problems.

Therefore, had RPR been used to investigate the 35 problems:

$$\begin{aligned} \text{Projected CapEx Saving} &= \frac{(54\% - 20\%) \times \text{£}3.2\text{m}}{54\%} \\ &= \text{£}2.03\text{m} \end{aligned}$$

## Background

The statistics in this paper relate to recurring performance and stability problems diagnosed through Advance7's REACT problem diagnosis service. REACT projects follow the RPR method and so experiences with REACT can be used to predict RPR performance.

A conservative approach has been taken throughout these calculations.

For both the savings in man days of effort and the savings in elapsed time we have used a figure given by the average less the standard deviation, thereby projecting the minimum saving.

When calculating the time taken to determine root cause with RPR we have included 10 man days to carry out standard 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Line support investigations into possible causes such as change, capacity and known bugs prior to initiating an RPR-based investigation.

We have assumed that problem resolution time without RPR is the sum of the number of days prior to the REACT engagement plus the RPR Man Days (REACT follows the RPR process), giving the formula:

$$\text{Projected Man Days w/o RPR} = \text{Prior Man Days} + \text{RPR Man Days}$$

where

$\text{Prior Man Days}$  = the time spent on the problem prior to the REACT engagement

and

$\text{RPR Man Days}$  = REACT man days + customer time (technical and Problem Management).

Problem duration without the use of RPR is calculated as the time from the problem start date to the date root cause was identified.

Problem duration with RPR is calculated as the time from the start date of the REACT project to the date root cause was identified, plus 10 days due to prior support effort.

<sup>1</sup> Ziff Davis, IT Management Solutions Study, March 2007