

## Assessing the Impact of Poor Requirements on Companies

## EXECUTIVE SUMMARY

This report presents the findings from surveys of over 100 companies and presents definitive findings on the importance and impact of business requirements on enterprise success with technology projects. The survey focused on larger companies and included an average project size of about \$3 million.

This white paper is one of three extracts of the study: Business Analysis Benchmark, the Impact of Business Analysts on North American Business, and Technology Projects. This volume focuses on the cost to organizations for using poor business requirements, and the impact that excellence in business requirements can have on time, budget, and overall project success rates.

Major conclusions of this study include:

- There is a 60% time and cost premium to be paid on projects with poor quality requirements.
- Fewer than one-third of companies are well-equipped to do a good job on business and software requirements and most companies pay for this with unsuccessful projects.
- Sub-optimal requirements consumes approximately 41.5% of the IT development budget for people (internal and external) and software on strategic projects.

The study finds two basic scenarios. In one group, companies are generally successful at delivering projects and approximately 50% are delivered on time and on budget. These companies also excel at doing good business requirements. In the other scenario, companies are not successful in their projects, and in 50% of cases budget or time runs excessively over while a fraction of functionality is delivered. These companies are not good at doing requirements.

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## WHAT IS THE LINK BETWEEN BUSINESS ANALYSIS AND SUCCESSFUL DELIVERY OF MAJOR PROJECTS?

68% of companies simply did not use the necessary competency in requirements discovery at the start of their project to assure project success. These companies are unlikely to spend almost 50% more for their solution than their peers that use a superior process.

It is generally understood that most major IT projects – especially, those designed to deliver significant operational change – come in late, over budget, and often, with less functionality than was originally envisioned. On the other hand, there are some projects that deliver exactly what was expected: on time, on budget, and to the specification set at the outset of the initiative.

What distinguishes the “stunning successes” from the “all-too-typical failures”? And what role do business analysts play in determining the ultimate success of a project? Finally, what is the cost to the business of requirements failure – or conversely – the benefit of requirements excellence? Every project manager will have their own gut-level conviction about both the role of an analyst and the impact these people have on projects. ***The data shows that many of these***

***entrenched beliefs about requirements are wrong and doom 68% of companies to project failure before the project ever really gets rolling.***

At the executive level there is an ongoing struggle to optimize resources and produce the results necessary to galvanize organizational change. The research here shows that many executives are overlooking a fundamental lever for organizational improvement – or tackling the problem of poor requirements in an ineffective way. ***The result is that the average organization will consume over 41.5% of its new project development resources on unnecessary or poorly specified requirements.*** To these executives, the question becomes: What is the overall impact of the analyst function on delivery efficiency? How do I best organize to minimize waste? What are the optimal short term and longer term initiatives that will deliver efficiency gains?

To answer these questions, IAG launched a comprehensive survey with technology research expert Michael O'Neil and the Info-Tech Research Group. The project asked respondents to report on recent business application projects costing in excess of \$250,000. IAG also eliminated ‘technology only’ projects such as a PC-roll-out to focus on a class of development that is organizationally strategic and focused on introducing new functionality. This research uncovers

startling insight into the connection between business analyst skills and overall project success.

While people intuitively recognize the need for good requirements, they have not internalized the impact of poor requirements in a way that makes them change behavior. It is also true that people who see business requirements as simply a 'deliverable' or written document of some kind will continue to fail. Excellence is achieved only through changing the requirements discovery process.

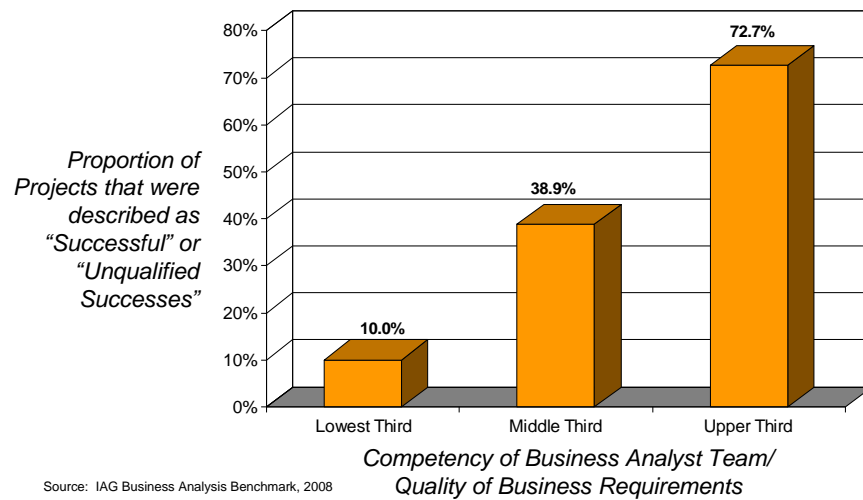
The research provides quantifiable support for concepts that are ingrained within many corporate cultures. For example, most managers intuitively understand that it's hard for a project to recover if the project team does a poor job on the business and software requirements; but failure to focus on getting good requirements had a negative impact on over two-thirds of the projects analyzed through the survey. Further, a mere 20% of companies have made the kind of investment needed to get excellent business and software requirements on a repeatable basis. ***This data suggests that while people intuitively recognize the need for good requirements, they have not internalized the impact of poor requirements in a way that makes them change behavior.*** It is also true that people who see business requirements as simply a 'deliverable' or written document of some kind will continue to fail. The findings clearly indicate that only companies which are committed to achieving excellence in business requirements through improvement involving people, process, and documentation/ information quality standards will be consistently, predictably successful. ***The pay-off for those companies that have made pervasive change to their people and processes of requirements is quite substantial:***

- over 70% of companies in the upper third of requirements discovery capability reported having a successful project.
- Better than half of their projects (54%) are on time, on budget and on function,
- As a group, these companies pay about 50% less for their applications.

Again, organizations understand these issues, but the findings here are that almost 70% did not take effective action. The data to support these findings are presented below.

## IAG FOUND TWO SCENARIOS - AND FOUND THAT 68% OF COMPANIES ARE UNLIKELY TO HAVE SUCCESSFUL PROJECTS

The IAG survey finds that 68% of companies did not do a good job on requirements when rolling out their last major project. As a result, only the top third of companies had a reasonable success rate on projects – the others had a higher probability of a marginal or unsuccessful project than they did of delivering one that was successful. To underscore this point: ***companies in the lowest third of requirements competency had three times more project failures than project successes.*** There are two basic scenarios which emerge from these statistics:



1. ***Scenario 1 – Improbable Success:*** 68% of companies are in this category. These companies will have successes, but statistically, are both more likely to have a marginal project or an outright failure than a successful project. As a group, these companies spent 49% more money and took 39% more time to deliver applications than their counterpart Scenario 2 companies. ***A mere 21% of projects reviewed from this group were on time and on budget while delivering the functionality expected by the business.***

2. *Scenario 2 – Probable Success:* 32% of companies are in this category. These are likely to have successful projects. Over 72% of the time, companies in this group reported a successful project and not one of these companies reported a failed project. As a group, these companies delivered their applications on time, on budget, and on function in over 54% of cases.

**Scenario 1: Improbable Success  
(68% of Sample)**

More likely to deliver a marginal project or outright failure than a success

Half this group has a three times greater chance of failure than success

This group expends:

- 49% more money
- 39% more time

**Scenario 2: Probable Success  
(32% of Sample)**

If a company focuses on business requirements and executing consistently, 73% of projects should turn out successful with only the rare project ending up a failure

54% of group delivered on time, on budget, on function

N=110

Source: IAG Business Analysis Benchmark, 2008

It is important for readers to determine whether their company is Scenario 1 or 2. Much of the analysis in this paper looks at the underlying issues of Scenario 1 versus Scenario 2 and it will be helpful for readers.

## THE HIGH PREMIUM PAID FOR POOR QUALITY BUSINESS REQUIREMENTS

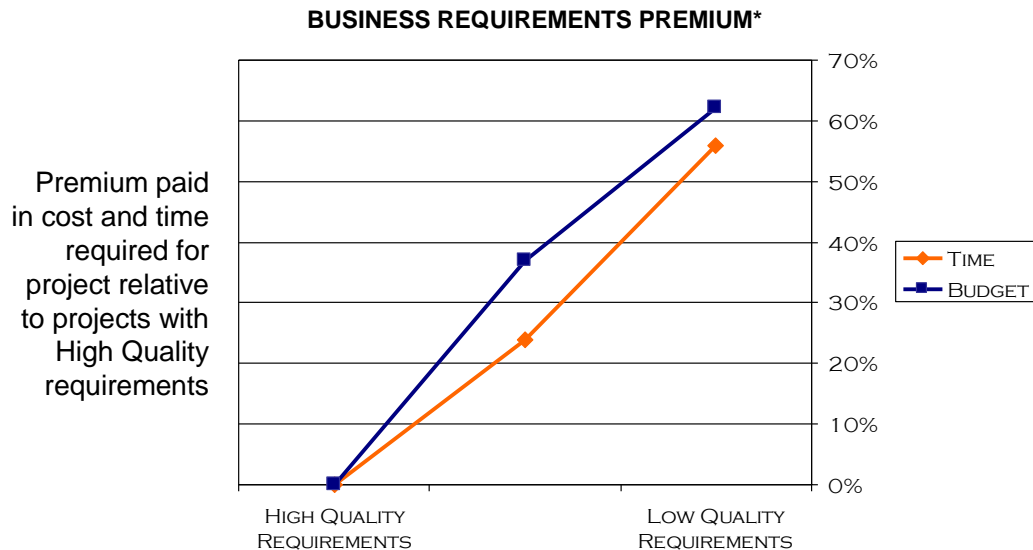
According to Meta Group research in 2003, the requirements definition phase of a project consumes only 10% of total budgetary expenditure with *ALL* pre-coding activities consuming something in the order of 39% of project expenditure.

The data from this study demonstrates clearly that a project manager who believes the quality of requirements received is below average would be better served to *REDO* requirements than to proceed on a large project despite the uproar this decision would create with business stakeholders. **79% of Scenario 1 projects were over time and over budget and a whopping 50% of these projects were runaways.** A runaway is the combination of any 2 of:

1. Taking over 180% of target time to deliver
2. Taking in excess of 160% of budget
3. Delivering under 70% of the target required functionality

A project manager with requirements that are below average, *which then proceeds with the project coding and implementation*, is betting against overwhelming odds that they will achieve a successful outcome.

***In absolute terms, the quality of requirements will dictate the time and cost of the solution.***



\* Average increase in the overrun on time or cost versus projects that used high quality requirements

N=109

Source: IAG Business Analysis Benchmark, 2008

The Business Requirements Premium<sup>1</sup> (graphic above) illustrates the data from the survey. There is a direct and substantial premium paid in time and budget by companies that failed to use optimal business requirements practices on their

<sup>1</sup> Calculated as the difference in performance divided by value achieved with there is high quality requirements. IAG also verified that each grouping had similar project size and company type.



project. The quantification of Business Requirements Premium presented is further confirmed by a second study of IAG customers<sup>2</sup> which had similar results.

Based on these two IAG studies with similar findings there is strong support for the finding” ***there is a 60% time and cost premium to be paid on projects with poor quality requirements***”.

## DETERMINING THE IMPACT OF POOR QUALITY REQUIREMENTS FOR THE AVERAGE COMPANY

As is seen from this research data, organizations often do not internalize the importance of business requirements analysis and the impact it has on overall development effectiveness. Almost 70% of organizations did not take effective action despite knowing that requirements are important to project success. It may be that there is a pervasive belief that requirements analysis is not seen as being part of the “real work” of a project, or that superior technical skills make the analysis phase unimportant. In other cases, it seems that requirements is considered to be the ‘document’ rather than the cumulative processes, practices and templates that were used to achieve consensus on needs. The research shows that all these above beliefs are false:

1. Lack of success in requirements analysis carries a significant and debilitating cost premium for the average company
2. It is possible to achieve consistently excellent results
3. Excellent requirements – used to deliver excellent projects – are achieved through use of excellent process.

***If your people and processes in business requirements are only AVERAGE, rather than excellent, this lack of excellence will consume approximately 41.5% of the IT development budget for people (internal and external) and***

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<sup>2</sup> Study of 6 customers across 36 matched projects – one using IAG methods, and one using an alternative which found the adoption of the IAG methods:

Reduced requirements cost and development cost by 58% and 60% respectively.

Compressed time required for delivery at the same rate.

**software on strategic projects.** Average competency people, producing average quality had the following effects as seen in the study results:

1. The “average” project in the study cost approximately \$1.1 million more than the “optimal” project. This creates a 36% cost premium.
2. The “average” project took 24% longer than an optimal project. This means that projects scheduled to be completed near the end of one fiscal year are often being delivered in the second quarter of the next fiscal year.
3. The average analyst fails 5.5% more times than needed. One in eighteen projects will likely need to be redone and consume a further 5.5% of budget.

It's a myth that the average analyst can be assigned any project. The evidence here: an average analyst will fail to achieve process reengineering objectives over 60% of the time. Average analysts do not deal well with process change objectives. Their requirements discovery process appears to be fundamentally different than that used by elite analysts.

To further illustrate the impact of “average” in requirements analysis: our analysis shows that it is unlikely that the average analyst team will be able to deliver on essential goals which are typically fundamental to the business case, such as restructuring for improvement and cost cutting:

1. The data shows that in 63% of cases where a significant change to business processes was a primary or important secondary consideration for the project, an average analyst will fail to deliver to business expectations.
2. In 56% of circumstances where cost cutting is a primary or important secondary consideration for the project, the average analyst will fail to achieve the goal.

**In contrast to the above, process change and cost cutting objectives were achieved by the high competency analyst teams on 88% of the projects reviewed.** As seen later in the study findings, excellence is not simply a matter of hiring better people. Excellence comes from rethinking the approach to how requirements are done.

Describing the effect of using only average people and process as ‘debilitating’ is perhaps unfair, since companies do not collapse as a result of poor quality analysis. In fact, IT organizations and the stakeholders involved will overcompensate through heroic actions to deliver solid and satisfactory results. However, ‘debilitating’ is an accurate word to describe the cumulative effect of years of average performance in requirements analysis when results are compared to competitors who are optimal.

## CAPTURING ECONOMIC VALUE IN THE REQUIREMENTS PROCESS

To help executives to visualize the issues created by sub-optimal requirements IAG has distilled some of our experience and related research into the following checklist. Executives need to internalize that massive change can occur by focusing on business requirements. This diagnostic tool on the next page is designed to provide a guideline for diagnosing where money and time is being inefficiently utilized. It will also help determine if there is substantial savings to be made at your corporation through focusing on the process of requirements discovery.

### Business Requirements Efficiency Assessment

| Factor  | Is this an issue at your company? |
|---|-----------------------------------|
| The excellent analyst will have the effect of minimizing scope while still delivering the essential functionality needed by the business. They do this at the point in time when opinion on scope and function is being set by leading the discovery so the projects will tend to get <i>smaller</i> over the cycle of requirements discovery. If projects at a company always seem to get <i>bigger</i> over their lifecycle, then that company is likely a Scenario 1. The net result is paying far more for applications than is absolutely necessary.               |                                   |
| Excellent business requirements done using excellent process will have very little change. It is not that these project definitions <i>cannot</i> change, it's that they don't because the defined requirements are more complete and stakeholders are satisfied that they have achieved consensus. IAG found that our Requirements Discovery Process™ reduced requirements change in a controlled study by 75%. If changing requirements effected any more than 8 statements in 100 on average <sup>3</sup> there is likely a problem and the company is a Scenario 1. |                                   |

<sup>3</sup> IAG reference study: Requirements change was shown to be reduced by 75% through the introduction of RDP™. The average number of changes to requirements was a mere 8 statements in 100 being affected by changes. Changes to requirements are largely attributed to unambiguous, unclear or inaccurate interpretation of the user requirement. Changes are typically made during requirements review and sign-off, during design or prototype walkthroughs, and during testing. Changes also occur as maintenance change requests but these are not part of this measure. Changes counted in this measure are additions (due to missed, imprecise or inaccurate requirements), changes (due to inaccurate or ambiguous specifications) and valid removals. Requirements *removed* as a result of changes in project scope and implementation are not counted in this measure.

|   |  |
|---|--|
| According to a variety of studies the average company has 30% to 35% rework on projects but many have well in excess of 50%. Further studies have seen that 75% of this rework is attributable to requirements change. Cutting rework translates into direct savings on project expenditure.  |  |
| Excellent requirements have unambiguous scope. Projects with excellent requirements will be delivered on time and budget 61% of the time. If your company's average variance is greater than 120% of target, or if the "contingency" used by IT when estimating projects is greater than 30%, there is likely a problem and the company is likely a Scenario 1.   |  |
| An excellent analyst process is precise and repeatable. This means that the analyst team should be able to forecast the amount of time needed by business stakeholders to conduct the assignment and stakeholders should expect efficient and effective meetings in the discovery of requirements. The average project in this study which used poor requirements practices overran the amount of time expected of stakeholders for participation by 200%. If a company has difficulty getting stakeholder involvement in projects, or the business analysis teams cannot consistently forecast the amount of time needed to do the business requirements for a project, or the stakeholders are thinking that they personally spend about twice as much time on projects as expected, there is likely a problem. Companies with this type of problem will see higher turnover, people working heroic hours to complete assignments, and poor quality sign-off processes on requirements. |  |

The impact of poor requirements on organization is significant and can be quantified. To make this cost tangible, IAG has provided the four tests above to diagnose where costs may be hidden. There is one final test which is more qualitative but well supported by the survey findings: if your stakeholders are not satisfied with more than five of the last ten projects completed by your organization, there is definitely a problem. **The direct interpretation of the bar chart on page four is: Being a Scenario 1 company with Improbable Success is synonymous with the phrase 'stakeholders are generally dissatisfied with the results of development efforts'.** This last test is easy to assess and makes it difficult for the senior IT executive to ignore the problem – eventually, dissatisfied customers get angry. If one of the five problems outlined above affects your organization, take a more detailed look at **DIAGNOSING ORGANIZATIONS** (next section). Diagnosing Organization is a step-by-step look at effective and ineffective strategies and behavior within organization surrounding the discovery of business and software requirements. These benchmark statistics are provided to further assist a senior executive pin in dispelling myths and identifying other underlying problems.

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For the external studies referenced, please see IAG's "Executive Guide to Business Requirements"

## SUMMARY OF STUDY FINDINGS: ASSESSING THE IMPACT OF POOR REQUIREMENTS ON COMPANIES

The nine key findings from the above are:

1. Many entrenched beliefs about requirements are wrong, and doom 68% of companies to project failure before the project ever really gets rolling.
2. If your people and processes in business requirements are only AVERAGE, this lack of excellence will consume approximately 41.5% of the IT development budget for people (internal and external) and software on strategic projects.
3. While people intuitively recognize the need for good requirements, they have not internalized the impact of poor requirements in a way that makes them change behavior
4. The pay-off for those companies that have made improvements to the people and processes involved in requirements analysis is quite large, with over 70% of these companies reporting successful projects.
5. Fully one-third of companies surveyed had three times more project failures than project successes. Given that their counterparts with excellent requirements processes had over 70% of projects being considered successful, this pervasive failure can only be attributable to requirements quality.
6. 68% of companies are Scenario 1 – They are unlikely to have successful projects. Moreover, 79% of Scenario 1 projects were over time and over budget. A whopping 50% of these projects were runaways (significantly over budget/time or under functionality).
7. Two different IAG studies have now produced identical findings: there is a 60% time and cost premium to be paid on projects with poor quality requirements.
8. Elite competency analyst teams achieved process change and cost cutting objectives on 88% of the projects reviewed
9. A direct interpretation of project data is: Being a Scenario 1 company with Improbable Success is synonymous with the condition of 'stakeholders are generally dissatisfied with the results of the development effort'

## ABOUT IAG CONSULTING

IAG specializes in business and software requirements. Since 1997, our company has worked with 300 of the Fortune 1000 companies, completed over 1,300 requirements projects, and trained more than 100,000 business analysis professionals. Our organization focuses on a practical and practiced approach that is efficient for all stakeholders in both business professional and information technology departments. We bring measurable gains to our clients:

- Reducing time needed to complete requirements
- Ensuring completeness in documentation and reducing change requests
- Issuing RFPs where vendors can bid accurately and clients get better terms
- Reducing costs in systems development
- Salvaging troubled projects

### CONTACTING AN IAG CONSULTING SPECIALIST

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