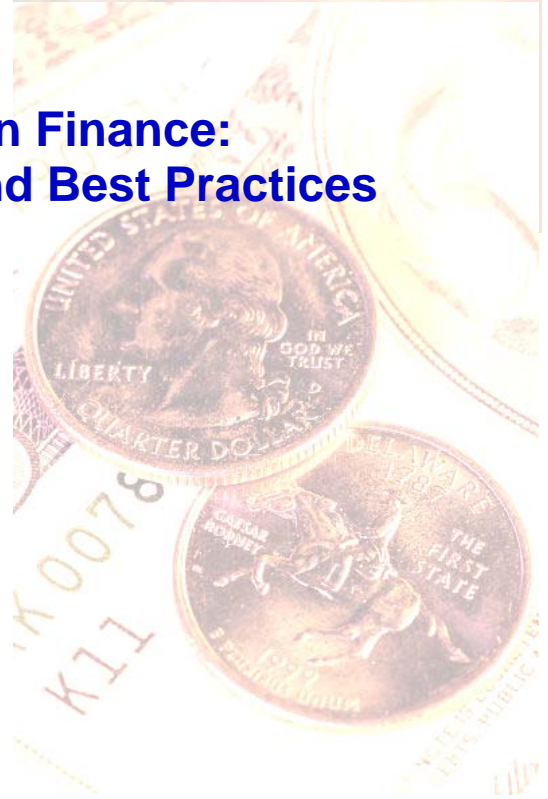




**Six Sigma in Finance:  
State of the Art and Best Practices**



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## BACKGROUND

During the fourth quarter of 2002, The Faltin Group conducted a survey of companies engaged in applications of Six Sigma. The purposes of the study were:

1. to determine to what degree Six Sigma is being used in financial applications;
2. to identify the types of applications being practiced; and,
3. to provide an informal, non-proprietary venue for companies to share best practices for applying Six Sigma to financial activities and processes.

Toward that end, we contacted representatives from over twenty companies across a wide range of industries: traditional and high tech manufacturing/engineering, healthcare, energy/utilities, real estate management, and banking/financial services. Most were willing in one degree or another to share their experiences in financial applications of Six Sigma. Many contributed one or more case studies of successful projects, and some indicated a willingness to discuss these further with other participating firms upon request.

Our findings, summarized here, reflect input from interviews, and from a number of case studies that were submitted which provided characteristic examples of projects applying Six Sigma to corporate finance and/or financial services.

## PROJECT CHARACTERISTICS

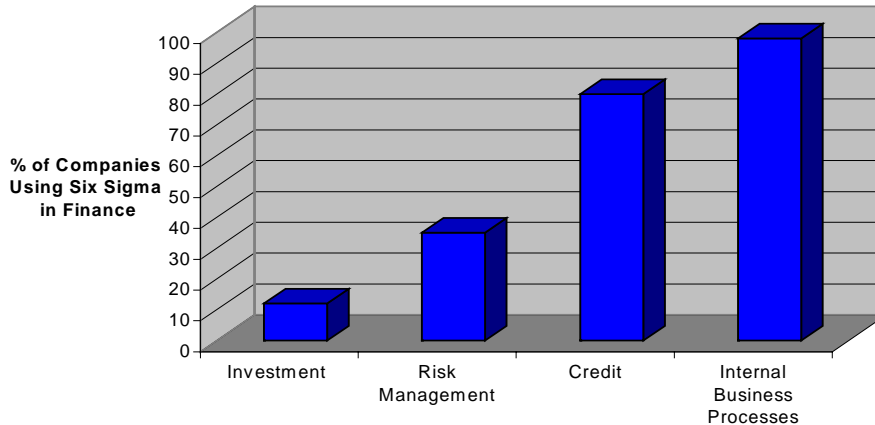
The duration of successful financial Six Sigma projects among the companies contacted typically ranged from 2 to 8 months, and occasionally longer. As one might expect, smaller, tactically oriented projects were generally at the shorter end of

this range, whereas larger projects of more profound strategic impact required longer durations. Tactical projects took, on average, 2-6 months, and strategic projects 6-8 months. Product/process improvement (DMAIC) projects also tended to be complete in somewhat less time (4 months, on average) than product/process Design for Six Sigma (DMADV) projects (6 months average). In cases of larger or less clearly defined projects, a common practice is to segment the broader objective into several smaller sub-projects that can be successfully completed within a compact time frame. In some cases, respondents reported groups of up to 3-5 coordinated projects being undertaken to address a particularly important business issue. Not surprisingly, the financial impact cited for successful projects varied widely, ranging from a typical minimum around \$100K up to values well in excess of \$10M.

## KEY FINDINGS

For convenience, we have divided Six Sigma applications to Finance into several natural categories: Internal Business Processes, Credit-Related Processes, Risk Management, and Investment Activities. The distinctions between these groupings are, admittedly, not always entirely crisp, but such a classification nonetheless facilitates discussion and helps present a clearer picture of the reach of Six Sigma in financial applications. Figure 1 summarizes the fraction of companies applying Six Sigma to Finance that conduct applications in each of these areas. Each category is defined in more detail below, accompanied by a list of examples encountered in our group's experience.

**Figure 1**  
**Financial Applications of Six Sigma**



### **Internal Business Processes**

Internal business processes are by a substantial margin the most common domain of financial Six Sigma applications. These applications include, among others, functions such as:

- payroll
- order/ship/bill processes,
- payables/receivables
- quarterly close
- regulatory filings
- financial data quality assurance
- internal audit
- travel and other expense processing

Such processes are present in companies from all industry groups, and are usually the starting point for corporate financial applications of Six Sigma. Virtually all companies that apply Six Sigma in Finance, do so in their internal business processes.

Project overviews submitted by participating companies which fall into this category were correspondingly quite numerous.

### **Credit-Related Processes**

A majority of companies employing Six Sigma in finance also do so in credit-related processes. These may include, among many others:

- evaluation of customer or supplier credit
- design of financing arrangements
- loan or insurance underwriting
- financial incentives/promotions
- negotiation of long term service contracts
- vendor managed inventory arrangements
- credit management operations

These processes are present in nearly

all companies, but specifics vary widely among industry groups, taking different forms among manufacturers, retailers, financial service providers, etc. Several of the case studies submitted by participants were projects of this type.

### **Risk Management**

A substantial fraction of companies that use Six Sigma in finance employ it in risk management capacities, as well. These may include:

- derivation/tracking of risk metrics (e.g., geographic or industry concentration)
- contract compliance monitoring
- developing forecasts or leading indicators of key business drivers
- tracking of financial or other metrics that provide timely visibility into key corporate functions

Although such practices are applicable across most industries, they are at present most commonly used (and most highly developed) among financial services firms. Forecasting of economic or industry factors that pose additional financial risk or presage coming downturns appears to be underutilized in the manufacturing, diversified, and non-financial services sectors.

A particular sub-category of risk management applications is the use of Six Sigma to monitor financial or corporate governance metrics, and/or to implement procedures as required by the Sarbanes-Oxley Act of 2002. Interestingly, despite numerous recent high-profile instances of accounting irregularities and fraud, none of the companies interviewed in this study indicated that they are applying Six Sigma to devise or monitor metrics

pertaining to corporate financial integrity. This is a very natural domain for Six Sigma which we believe will grow in importance, and one which has been the area of substantial recent research and several related publications (see the Bibliography at the end of this report).

### **Investment Activities**

A few leading Six Sigma companies are using Six Sigma to plan, execute, evaluate, and manage their investment activities. Current practice in Six Sigma applications to investments, though modest in number, are exceedingly diverse, including, among others:

- estimating opponents' bids in competitive bidding situations
- maximizing process efficiency and accuracy in time-constrained evaluation of investment opportunities
- streamlining processes for financial instrument securitization
- due diligence assessments for Mergers & Acquisitions
- applications to securities analysis
- portfolio management techniques
- providing early warning of increased likelihood of default or bankruptcy
- defining fundamental investment processes and metrics
- optimizing asset mix, purchase, and disposition in asset management businesses

At present, such practices are generally limited to companies in the financial sector, or to large diversified firms with substantial investment operations. Two of the projects submitted dealt with investment applications of Six Sigma.

## LIMITATIONS

Because participation was voluntary, there is no way to assure that contributing companies constitute a representative sample of current practice. However, as indicated above, firms included in the study spanned a wide range of industry groups. For this reason, and based on our experience as practitioners in the field, it is our judgment that the observations reported here do convey a representative cross-section of the typical present conduct of Six Sigma applications in Finance.

Comments regarding applications types that are *not* currently common practice must be considered speculative, since there can be no assurance that participating companies chose to disclose all areas of their current activities.

In some cases, members of The Faltin Group have personal familiarity with these or other projects of the types discussed, and may be available to discuss *non-proprietary* aspects of such practices upon request.

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