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**ROI CASE STUDY**

# IBM SMARTER COMMERCE: SPSS MUELLER, INC.

NUCLEUS RESEARCH

## THE BOTTOM LINE

Mueller, Inc., a manufacturing company, chose IBM SPSS for predictive analytics to provide better insight into how its sales, operations, and services impacted margins and customer satisfaction. In looking at the deployment, Nucleus found this Smarter Commerce project enabled Mueller to identify sales outliers and define a more consistent sales process and pinpoint the cause of key customer service-related satisfaction issues. With insights from predictive analytics, the company was able to avoid costly investments and reduce discounting while improving customer satisfaction.

ROI: **248%**
Payback: **2.4 months**
Average annual benefit: **$216,933**

## THE COMPANY

Mueller has provided prefabricated steel buildings, roofing, and construction products to customers in the Southwest United States for more than 75 years. The company has more than 500 employees and operates three manufacturing and distribution locations and 30 retail outlets. Mueller is privately held.

## THE CHALLENGE

Mueller is a long-time IBM business analytics customer, and was looking for a way to get more value out of its own big data. Its initial IBM business analytics implementation was very successful, and had provided great returns for the company (Nucleus Research *l115 – IBM Smarter Commerce ROI case study - Mueller, Inc.,* October 2011). However, Mueller knew that it could do more with the 13 years of transactional and operational data that it had accumulated, particularly in better understanding patterns in its sales and service transactions. Two key areas where Mueller wanted to gain better insights included:

- Sales anomalies. Mueller management knew that there were some inconsistencies in its sales processes that resulted in unusual discounts being granted, and it had had

some turnover in the sales department because of perceived rogue behavior, but it wanted to understand when discounting or cancellations were normal transactions; when they might be justified by a particular region, project type, or material type; or when they might be inappropriate.

- Service delivery and customer satisfaction. Many of Mueller's projects had a custom component, and Mueller had recognized that, compared to its overall shipments, a high percentage of those projects were rejected upon delivery. Sales people saw resolution of shipping issues as a pressing problem for Mueller's customer satisfaction, and the company had considered a significant investment in new packaging equipment to resolve the issue. However, before making that investment, the CFO wanted a better understanding of the root cause of the delivery damages and what other factors might be involved before he was willing to approve the investment.

These areas were two examples that Mueller knew would need the power of predictive analytics to analyze, model, and understand because of their multivariate nature – as well as the sheer volume of data to be analyzed. Mueller determined it needed to extend its analytics investment to include predictive analytics to make more informed business decisions.

## THE STRATEGY

In October 2013, Mueller's manager of strategy analytics and business intelligence began investigating SPSS to determine if it would help provide such insights. Mueller already had a well-established IBM business analytics environment; further reasons to select SPSS included:

- SPSS could integrate directly into the existing IBM business analytics infrastructure, and leverage the business rules, data connections, and metadata already defined and being used by Mueller.
- The manager had extensive experience with the IBM business analytics solution and felt the SPSS tool would be very quick and easy to understand, with very little training.
- Mueller's previous successful experience with IBM business analytics made management confident that it could be successful by expanding it with predictive analytics from the same vendor.

> *"The culture of Mueller is very customer focused. We are here for the customer, and here for the company. Having a better understanding of sales and manufacturing activities, finding the questions we need to ask and getting the answers from the data is just one of the ways we are working to keeping our customers happy."*
>
> - Mark Lack, Manager, Strategy Analytics and Business Intelligence

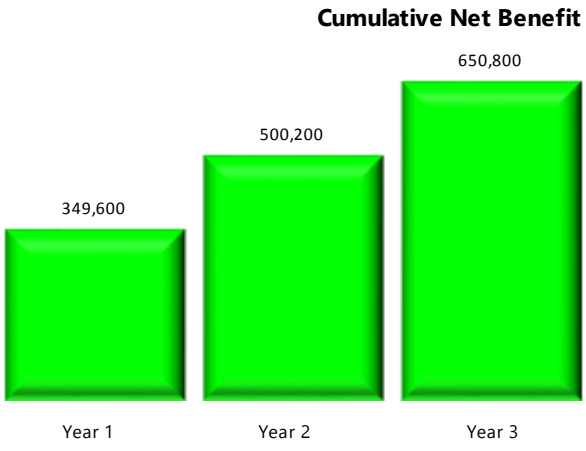
Mueller implemented SPSS in January 2013. The initial installation and testing was completed in one week. As SPSS integrated directly into the existing business analytics

environment, the manager was able to quickly move forward on building modelling streams and analyzing the data, bringing to project to the analysis stage on time and below budget. By adopting predictive analytics, Mueller embraces IBM's forward looking business intelligence approach to data analysis which allows a past, present, and future view of their business data for better decision making.

## KEY BENEFIT AREAS

Using SPSS has enabled Mueller to analyze large volumes of data and answer questions that were not possible before because of the volume and complexity of the data. Within five months of implementation, Mueller was able to uncover enough insights to solve its initial two business problems. Main benefits of the project included:

- Increased sales consistency. SPSS enabled Mueller to create the appropriate analysis to better understand the discounting process. By building a model stream that focused on cancelled orders, correlating them with discounting trends, and focusing on customer type and project type, Mueller was able to quickly process the three million transactions and created an outlier analysis. Sales management is now able to have a clear picture into the discounting practices and a better understanding of where and when it is appropriate or inappropriate. Because sales teams are aware of this visibility, the amount of rogue discounting has been reduced and the teams are keeping more accurate and detailed data on any orders that are outliers.
- Avoided equipment investment. By analyzing the orders, types of materials, and nature of the customized projects delivered to customers, Mueller was able to uncover that the underlying issue was not the transport, but the accuracy of the measurements provided for the manufacturing of the components. The ability to analyze five years of data and quickly discover the problem enabled Mueller to avoid the investment in new equipment.



- Improved customer satisfaction. Greater visibility and insights into sales, custom project management, and delivery processes has enabled Mueller to deliver more consistently on projects, reducing delivery rejections and increasing customer satisfaction.

## KEY COST AREAS

Costs of the project included software licensing, services, training, personnel time spent in the pilot period, and ongoing support. Thirty days were spent on the initial implementation. Ongoing support is minimal, averaging about one day per month, with an additional two days a month spent on developing new modeling streams. One hour of online training was all that was necessary, as Mueller's manager of strategy analytics and business intelligence was quite versed in IBM business analytics.

**Cost : Benefit Ratio** | **1 : 4.7**

## BEST PRACTICES

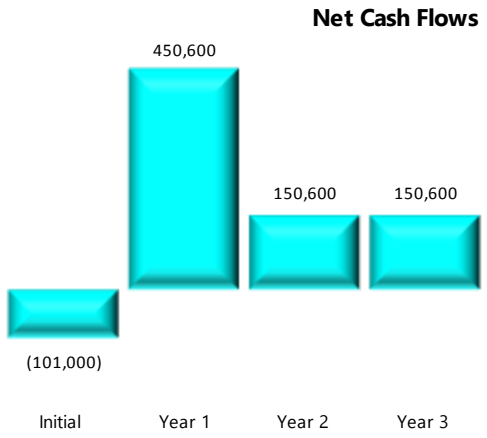
Mueller's success with SPSS has been driven from several important factors: ensuring the data is clean, having good access to the data, and defining processes well. These steps, which were a part of Mueller's existing business analytics investment, delivered rapid initial return on investment and established a foundation for more sophisticated analysis once Mueller had developed the needed expertise to move beyond analytics to predictive analytics.

In addition to a solid foundation for analysis, the usability of SPSS and the ability of the analytics manager to leverage much of his existing knowledge of other IBM tools has enabled him to rapidly adopt predictive analytic models for more sophisticated business analysis. Companies increase their return on investment from analytics by expanding it beyond point reporting and backward looking-analysis on single sets of data, applying it more broadly to analyze structured and unstructured operational data to predict business outcomes. This requires an investment in compatible tools and technologies that can scale as needs change and are architected with the business analyst, not the data scientist, in mind.

*"With well-defined model streams, and a little data, you can achieve enormous returns."*
- Mark Lack, Manager, Strategy Analytics and Business Intelligence

## CALCULATING THE ROI

Nucleus calculated the initial and ongoing costs of software, personnel, consulting, and training over a 3-year period to quantify Mueller's total investment in its SPSS deployment.




Direct benefits were realized through avoiding new equipment purchases and the profits based on a reduction in product discounting. Not quantified were the additional benefits Mueller will realize from predictive analytics as it extends its analysis to other business problems and data.

## FINANCIAL ANALYSIS

IBM SPSS

Annual ROI: 248%
Payback period: 0.2 years

| ANNUAL BENEFITS | Pre-start | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|
| Direct | 0 | 475,000 | 175,000 | 175,000 |
| Indirect | 0 | 0 | 0 | 0 |
| **Total per period** | 0 | 475,000 | 175,000 | 175,000 |

| CAPITALIZED ASSETS | Pre-start | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|
| Software | 0 | 0 | 0 | 0 |
| Hardware | 0 | 0 | 0 | 0 |
| Project consulting and personnel | 0 | 0 | 0 | 0 |
| **Total per period** | 0 | 0 | 0 | 0 |

| DEPRECIATION SCHEDULE | Pre-start | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|
| Software | 0 | 0 | 0 | 0 |
| Hardware | 0 | 0 | 0 | 0 |
| Project consulting and personnel | 0 | 0 | 0 | 0 |
| **Total per period** | 0 | 0 | 0 | 0 |

| EXPENSED COSTS | Pre-start | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|
| Software | 50,000 | 10,000 | 10,000 | 10,000 |
| Hardware | 0 | 0 | 0 | 0 |
| Consulting | 38,000 | 0 | 0 | 0 |
| Personnel | 12,000 | 14,400 | 14,400 | 14,400 |
| Training | 1,000 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 |
| **Total per period** | 101,000 | 24,400 | 24,400 | 24,400 |

| FINANCIAL ANALYSIS | Results | Year 1 | Year 2 | Year 3 |
|---|---|---|---|---|
| Net cash flow before taxes | (101,000) | 450,600 | 150,600 | 150,600 |
| Net cash flow after taxes | (55,550) | 247,830 | 82,830 | 82,830 |
| **Annual ROI - direct and indirect benefits** | | | | **248%** |
| Annual ROI - direct benefits only | | | | 248% |
| Net Present Value (NPV) | | | | 316,028 |
| **Payback period** | | | | **0.2 years** |
| Average Annual Cost of Ownership | | | | 58,067 |
| 3-Year IRR | | | | 383% |

| FINANCIAL ASSUMPTIONS | |
|---|---|
| All government taxes | 45% |
| Cost of capital | 7.0% |

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# By the Numbers

*Mueller, Inc.'s IBM SPSS project*

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Annual Return on Investment **248%**

**2.4** months

The total time to value, or **payback** period, for the project

**Cost : Benefit** Ratio **1 : 4.7**

**$216,933**

Average annual benefit

***THE PROJECT***

Mueller, Inc., a manufacturing company, chose IBM SPSS for predictive analytics to provide better insight into its sales, operations, and services. Nucleus found this Smarter Commerce project enabled Mueller to identify sales outliers, define a more consistent sales process and pinpoint the cause of key customer service-related satisfaction issues.

***THE RESULTS***

Increased customer satisfaction
Improved sales process

Number of **users: 1**

**1** Months

Total time for the company to deploy IBM SPSS

*"Having a better understanding of sales and manufacturing activities, and getting the answers from the data is just one of the ways we are working to keep our customers happy."*

Mark Lack, Manager, Strategy Analytics & Business Intelligence