

Production, Sales & Inventory Forecasting System Initiative Proposal for Fluke

Zarya Faraj

Estia Amy Nyopieh

Jason Phelps

Yan Ren

**Instructor : Frank Coker
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I. EXECUTIVE SUMMARY

Problem

Fluke is in need of a robust PSI (Production, Sales, Inventory) Forecasting System that can handle the weight of the expanding Enterprise. The home grown Access based system currently being utilized is simply not equipped with all the functionalities necessary for the management of information that is channeling through the company's world-wide entities. Some of the problems with the current system that need addressing are:

- Inadequate speed
- Lack of support from IT since the system is not an Oracle bolt on system
- Unreliability due to corrupt data
- Inability to capture notes and other post mortem contextual information for future use
- Since every forecast must be loaded individually for thousands of SKU's, the marketing department does allocate time for the preparation of a proper forecast

The inefficient system environment and insufficient IT support has caused significant communication problems between the Marketing and Operations departments. As such, Fluke has engaged in \$5.4 million of unnecessary expenditure in order to meet a 95% on time delivery rate and to compensate for a 65% forecast accuracy rate.

Solution

Fluke must contend with the staggering expenses associated with the continued utilization of MS Access as a PSI system. The company has the chance of pursuing an opportunity gap amounting to \$5.4 million. Through our team's research of two leading PSI systems, Oracle Demantra and JDA, and outsourcing as a third alternative, we recommend Oracle Demantra as a means to close the gap between forecast accuracy and on-time delivery. Oracle Demantra will bridge this monumental gap by delivering \$2.5 million in cost reductions in the three years subsequent to its implementation. Cost reduction elements would include reducing expedited costs, overtime costs, and safety stock inventory costs. As a result, not only will Fluke be better positioned to realize its two main visions, namely, to be an industry leader in customer satisfaction and to maintain excellent stockholder equity, but also to assure that it has the appropriate infrastructure to support its growth and expansion.

II. ALTERNATIVES

Upon the Board's approval of our preliminary proposal for research funding, we initiated a three week long research inquiry into three potential replacement systems, specifically, Oracle Demantra, JDA, and an outsourced system. We will now address the benefits and potential risks associated with each alternative. Please refer to the Appendix for detailed calculations and research conducted for deducing the quantitative data addressed herein.

Oracle Demantra

Oracle is the leading alternative for solving Fluke's \$5.4 million problem. Normally, introduction of a new system within an Enterprise is faced with large scale resistance, which then hinders the proper implementation and usage of that system. Oracle, conversely, is not entirely new to Fluke. The IT department is already comfortable and familiar with Demantra since the company uses Oracle products widely in its operations. In addition to the advantage of familiarity and ease of use, Oracle is also a sound alternative as it would provide all the necessary features required to support Fluke's expanding information pool, including Value Chain Planning, Enterprise Project Portfolio Management (EPPM), Product Lifecycle Management (PLM), and Customer Relationship Management (CRM).

Oracle can substantially increase efficiency and reduce costs (Oracle, 2010) by achieving the following:

- Increase order fill rate from 55% to over 95%
- Increase inventory turns from 3x to 6x per year
- Reduce retail compliance fines by 85%
- Reduce logistics costs by 65%
- Reduce finished goods inventory costs by 8%
- Improve forecast accuracy 5% to 10% at the SKU level
- Enable a comprehensive S&OP process
- Improve Fluke's forecast accuracy through advanced analytics
- Enable efficient response to supply chain events through event-driven planning

While the cost of the initial investment in Oracle Demantra amounts to \$550,000 with an additional \$147,500 needed each year for supporting the associated operating costs, Oracle would provide an average of \$948,333 per year in cost reductions, which amounts to \$2.5 million in cost reductions over the next three years. The implementation period would be 4 months. Additionally, the return Fluke will receive over the entire term of the investment is approximately 93%, with the 13 month pay back period. Oracle will also increase Fluke's current forecast accuracy rate from 65% to over 85% without the \$5.4 million currently being spent annually to maintain a 95% on-time accuracy rate.

JDA

JDA is yet another alternative that our team researched as a replacement PSI system for Fluke. Like Oracle, JDA is a market leader in the Supply Chain Planning market. In fact, 83 of the top 100 consumer goods manufacturers utilize JDA to optimize their global supply. Our research indicated that Fluke would witness the following improvements (JDA Software Group Inc., 2010) upon implementation of JDA:

- Improved forecast accuracy ranging from 20-50%
- Decreased days of supply by more than 25%
- Increased customer service levels by as much as 15%
- Maintained service level average of 97.5%, versus a cross-industry average of 92%
- Decreased freight expenses of 7-13%

- Improved on-time and in-full rates from 82% to above 90%
- Reduced production freeze periods from 8 weeks to less than a week

The cost of investment in JDA is \$1 million, with \$147,500 needed annually for operating costs. JDA will provide substantial cost reductions equating to approximately \$948,333 annually. Fluke will receive a 31% return on investment, which will be fully realized at 22 months.

Outsourcing

Outsourcing is the third alternative that our team researched in order to provide Fluke with a comprehensive set of options. Our research indicates that outsourcing may have more disadvantages than benefits.

At the onset, a supplier of an outsourced PSI system would have a poor understanding of Fluke's business objective and system requirements. As a result, we can expect poor communication between the supplier and Fluke during the development period. Upon delivery of a PSI Forecasting system, we can expect the following problems:

- Failure to agree to ownership/licensing prior to delivery due to Intellectual Property Right (IPR) standards
- Cost of updates to PSI Forecasting System high due to absence of in-house solution knowledge, and inadequate updates due to lack of interest
- No safeguards against supplier bankruptcy
- Integration with Fluke's current system in order to achieve platform compatibility may cost Fluke higher over a long period
- The solution may be faced with resistance due to lack of familiarity

The cost of investment in an outsourced PSI system from a currently unidentified supplier would cost Fluke \$750,000, with \$147,500 needed annually for supporting operating costs. An outsourced system will provide \$948,333 in cost reductions each year. For its investment, Fluke will receive a 45% return, with the payback period at 21 months.

III. RECOMMENDATION

From our research and in-depth analysis of the three alternatives outlined in this report, specifically, Oracle Demantra, JDA, and outsourcing, we recommend Oracle Demantra as the clear solution to Fluke's \$5.4 million problem. The comparison of the three alternatives will highlight the justification for this recommendation.

Oracle Demantra will provide Fluke with a 93% return on investment at 13 months compared with 31% ROI with JDA at 22 months, and 45% ROI with outsourcing at 21 months (see Appendix). Fluke will see a substantially higher return on investment and a shorter pay back period with Oracle Demantra than with the other two alternatives. Finally, the implementation period of Demantra is at 4 months, compared with 6 months for JDA, and 8 months for outsourcing.

Notwithstanding the clear economic benefits of Oracle over JDA and outsourcing, we also conducted a Key Performance Evaluation (KPI) of all three alternatives to highlight intangible

benefits, such as competitive response, management information, strategic match and customer satisfaction. Based on our evaluation of the potential performance of the three alternatives, Oracle Demantra received 96 points, JDA received 76 points, while outsourcing garnered the lowest score of 57.

Our research indicates that the investment costs associated with JDA and the risks posed by an outsourced PSI system are simply too high. Oracle Demantra, on the other hand, is the best solution for Fluke because it will seamlessly integrate with Fluke's current Oracle system, in addition to having the highest ROI and the shortest payback period among the three alternatives. Oracle Demantra is cost effective, IT supported and will provide a solid competitive advantage through operations cost reduction, increased inventory turns, and the ability to better utilize capacity to capture market share.

III. NEXT STEPS

The Enterprise-wide project of replacing Fluke's current system with Oracle Demantra will help Fluke capture the \$5.4 million opportunity gap, save \$2.5 million over the next three years, and support its two main visions, which are to be an industry leader in customer satisfaction and to maintain excellent stockholder equity. In order to realize these goals, we request \$550,000 in investment from the Board. The management of this project is thus paramount for success, and as such, we have outlined an overview of our project timeline and milestones herein. Please refer to the Appendix for a more detailed breakdown.

The project will be structured into three phases, specifically, Implementation, Transition Complete & System Rollout, and Post Implementation Review (PIR) Phase. If we gain your approval and investment of \$550,000, we will initiate the Implementation Phase of this project during the first week of June. During this period, we will address tasks such as hardware/software/license purchases, network support, application/procedural training, as well as data migration and audit. The fourth week of August will mark a checkpoint, wherein, we will make the necessary customizations and modifications based on user demand and feedback. During the fourth week of September, we will have completed transition and system roll out will initiate. From the fourth week of September to the fourth week of February, 2012, we will be engaged in service quality monitoring, gap analysis and investigation, and generating information audit reports.

IV. REFERENCES

- Oracle, *Eveready Improves Forecast Accuracy, Reduces Warehouse Stock Levels*, 2010
<http://www.oracle.com/us/corporate/customers/eveready-demantra-case-study-120733.pdf>
- JDA Software Group Inc., *JDA Software: Powering the Lean, Customer-Driven Supply Chain for Manufacturers Worldwide*, 2010
http://www.jda.com/file_bin/brochures/JDA-Manufacturing_Industry_Brochure.pdf

V. APPENDIX

Oracle Demantra

(A)

Investing Costs			Year 1
A	Customization effort		\$ 100,000.00
B	New hardware		
	1	Terminals, printers, communications	\$ -
	2	Other	
C	New software		
	1	Packaged applications software	\$ 400,000.00
	2	Other	
D	User training		\$ 45,000.00
E	Other: Information Audit		\$ 5,000.00
TOTAL			\$ 550,000.00

(B)

Operating Costs			Year 1-3
A	Application licensing fee		\$ 90,000.00
		Cost per license	1000
		User number	90
B	System and network support & maintenance		\$ 10,000.00
C	Incremental data storage required		\$ 2,500.00
D	Hardware and software upgrade		\$ 35,000.00
E	Refresher User Training		\$ 10,000.00
TOTAL			\$ 147,500.00

(C)

Cost Reduction			Year 1-3
	Reduced expedited costs		\$ 400,000.00
	Reduced over time costs		\$ 70,000.00
	Reduced safety stock inventory costs		\$ 478,333.00
TOTAL			\$ 948,333.00

(D)

CASH FLOW					
		YEAR 1	YEAR 2	YEAR 3	TOTAL
CASH INFLOWS					
	Cost Reduction	\$ 625,900	\$ 948,333	\$ 948,333	\$ 2,522,566
CASH OUTFLOWS					
	Investing Costs	-550000			\$ (550,000)
	Operating Costs	\$ (147,500)	\$ (147,500)	\$ (147,500)	\$ (442,500)
NET CASH FLOW		\$ (71,600)	\$ 800,833	\$ 800,833	\$ 1,530,066
SIMPLE ROI		93%	2.781937782		
BREAK-EVEN (PAYBACK) MONTH		13			

JDA**(A)**

Investing Costs			Year 1
A	Customization effort		\$ 100,000.00
B	New hardware		
	1	Terminals, printers, communications	\$ -
	2	Other	
C	New software		
	1	Packaged applications software	\$ 850,000.00
	2	Other	
D	User training		\$ 45,000.00
E	Other: Information Audit		\$ 5,000.00
TOTAL			\$ 1,000,000.00

(B)

Operating Costs				Year 1-3
A	Application licensing fee			\$ 90,000.00
		Cost per license	1000	
		User number	90	
B	System and network support & maintenance			\$ 10,000.00
C	Incremental data storage required			\$ 2,500.00
D	Hardware and software upgrade			\$ 35,000.00
E	Refresher User Training			\$ 10,000.00
TOTAL				\$ 147,500.00

(C)

Cost Reduction			Year 1-3
	Reduced expedited costs		\$ 400,000.00
	Reduced over time costs		\$ 70,000.00
	Reduced safety stock inventory costs		\$ 478,333.00
TOTAL			\$ 948,333.00

(D)

CASH FLOW					
		YEAR 1	YEAR 2	YEAR 3	TOTAL
CASH INFLOWS					
	Cost Reduction	\$ 474,167	\$ 948,333	\$ 948,333	\$ 2,370,833
CASH OUTFLOWS					
	Investing Costs	-1000000			\$ (1,000,000)
	Operating Costs	\$ (147,500)	\$ (147,500)	\$ (147,500)	\$ (442,500)
NET CASH FLOW		\$ (673,334)	\$ 800,833	\$ 800,833	\$ 928,333
SIMPLE ROI		31%			
BREAK-EVEN (PAYBACK) MONTH		22			

Outsourcing

(A)

Investing Costs			Year 1	
A	Customization effort			
B	New hardware			
	1	Terminals, printers, communications		\$ -
	2	Other		
C	New software			
	1	Packaged applications software		\$ 700,000.00
	2	Other		
D	User training			\$ 45,000.00
E	Other: Information Audit			\$ 5,000.00
TOTAL				\$ 750,000.00

(B)

Operating Costs				Year 1-3
A	Application licensing fee			\$ -
		Cost per license	0	
		User number	90	
B	System and network support & maintenance			\$ 90,000.00
C	Incremental data storage required			\$ 2,500.00
D	Hardware and software upgrade			\$ 45,000.00
E	Refresher User Training			\$ 10,000.00
TOTAL				\$ 147,500.00

(C)

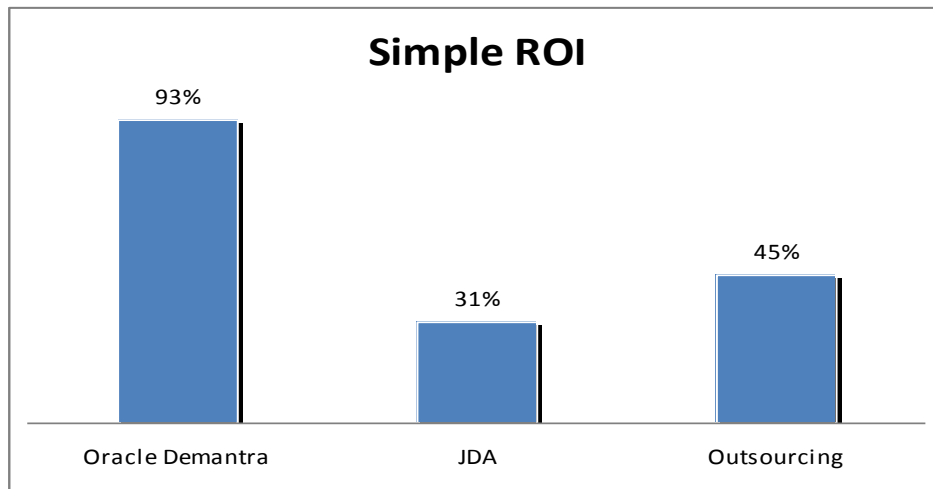
Cost Reduction			Year 1-3	
	Reduced expedited costs		\$	400,000.00
	Reduced over time costs		\$	70,000.00
	Reduced safety stock inventory costs		\$	478,333.00
TOTAL			\$	948,333.00

(D)

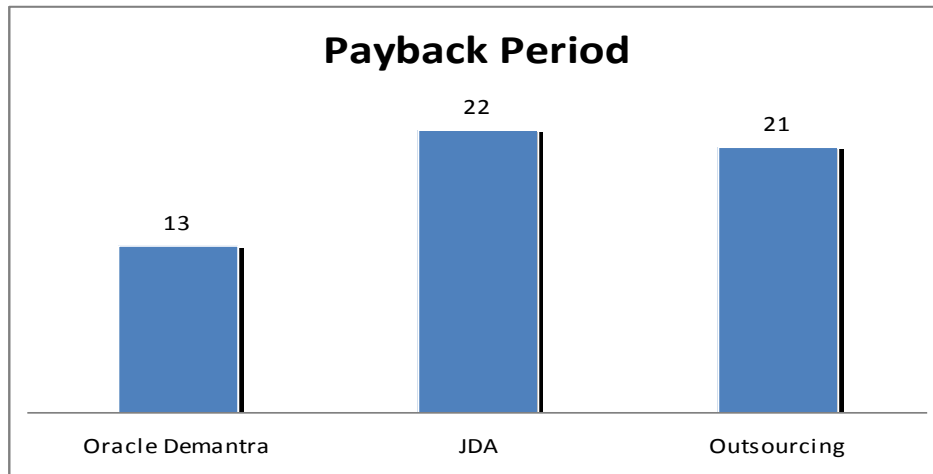
CASH FLOW					
		YEAR 1	YEAR 2	YEAR 3	TOTAL
CASH INFLOWS					
	Cost Reduction	\$ 312,950	\$ 948,333	\$ 948,333	\$ 2,209,616
CASH OUTFLOWS					
	Investing Costs	-750000			\$ (750,000)
	Operating Costs	\$ (147,500)	\$ (147,500)	\$ (147,500)	\$ (442,500)
NET CASH FLOW		\$ (584,550)	\$ 800,833	\$ 800,833	\$ 1,017,116
SIMPLE ROI		45%			
BREAK-EVEN (PAYBACK) MONTH		21			

Alternative Comparison

(A)



(B)



Payback Period in months

(C)

KPI	Weight	Oracle Dementra	JDA	Outsourcing
Economic Impact	8	5	3	4
Customer Satisfaction	4	5	5	4
Strategic IS Architecture	3	5	3	3
Competitive Advantage	2	4	5	4
Strategic Match	1	5	5	5
Management Information	1	5	5	5
Competitive Response	1	5	5	5
Project or Organizational Risk	-1	0	0	3
Definitional Uncertainty	-2	0	0	5
Technical Uncertainty	-2	1	0	5
IS Infrastructure Risk	-2	0	1	0
SCORE		96	76	57

Indicator	Definitions
Strategic IS Architecture	The system is aligned with the MIS and IT strategy, as reflected by the MIS and IT blueprint.
Project or Organizational Risk	The degree to which the system is dependent on new or untested skills, management capabilities, and experience
Definitional Uncertainty	The degree to which the specifications for the project are ill-defined .
Technical Uncertainty	The degree to which the system is dependent on new or untested skills, hardware, software, and systems .
IS Infrastructure Risk	The degree to which technology domain investment in other prerequisite service or environmental facilities is required.

