

APPENDIX

Sample Business Case

Theme

Complete example of a fictional business case that illustrates key principles and concepts outlined in the main body of the book.

Explanation of This Sample Business Case

This Appendix contains the complete business case for ABC Corporation's evaluation of an intranet-based Global KnowledgeBase (GKB) for use by the firm's product design engineers. While this business case is fictional, it is a composite of many real-life situations the author has encountered. As such, this sample illustrates many key principles and concepts discussed in the main chapters of this book.

This sample business case is included here to:

- Help the reader more quickly grasp how the book's techniques operate in real life.
- Show the reader a role model of a best-practice business case that deals with a situation where the investment is significant to the enterprise and where the decision of whether to invest is murky and politically controversial.
- Provide a template usable for development of other business cases the reader may wish to create.

By no means should all business cases contain this level of detail and reporting. However, the overall structure and topic contents of this sample are applicable to any size investment. The level of effort, as well as the page count, can simply be contracted or expanded to reflect the extent of analysis requested by the decision team. The author recommends that business cases be kept to a maximum page count (not including appendices) of 30 pages (for a highly complex and controversial investment), or preferably much less.

Memo

TO: IT Evaluation Committee, ABC Corporation

FROM: GKB Business Case Team

SUBJECT: Business Case for the Intranet Global KnowledgeBase (GKB) Initiative

DATE: November 19, 20X2

We are pleased to submit to the IT Evaluation Committee the attached document, "Business Case for ABC Corporation's Intranet Global KnowledgeBase Initiative."

This document has been developed in accordance with ABC Corporation's newly adopted "Business Case Design and Evaluation Guidelines." The purpose of these new guidelines is to both strengthen and streamline the manner in which ABC develops and evaluates business cases. This in turn becomes a major driver to maximize the business value from IT investments.

We understand that this business case is the first one submitted under these new guidelines. We wish to thank the committee for this opportunity.

As provided for in these new guidelines, a copy of this business case is being sent to ABC's value analysis repository for use, as needed, by future business case development teams.

The GKB business case team looks forward to feedback from the IT Evaluation Committee concerning the usefulness of this business case to the committee's decision, along with suggestions for future improvements to the process of business case development.

Respectfully submitted by:

Jerry Whitman,
Team Leader
GKB Business Case Team

Business Case for ABC Corporation's Intranet Global KnowledgeBase Initiative

Prepared for

The ABC IT Evaluation Committee

Prepared by:

Patti Perowski, VP Sales, Global Accounts, Team Executive Sponsor

Barry Williams, Director of Product Design, Evaluation Team Leader

Evelyn Chung, Systems Analyst

Mark Fabrenay, Content Manager

Quita Ortega, Director of Finance

Shanti Wittcome, Product Design Engineer

Bryce Branson, Partner, ACME Consulting, Special Adviser

Delivered on:

November 19, 20X2

Preface

This document presents the research, findings, and recommendations of the business case team formed to assess the business value of the proposed Intranet Global KnowledgeBase for ABC Corporation’s product design engineers.

Table of Contents

| Topic |
|---|
| Cover Page |
| Preface |
| Table of Contents |
| List of Exhibits |
| I. Introduction |
| A. Business Drivers Triggering This Business Case |
| B. Scope of Business Case Analysis |
| 1. Purpose of This Business Case |
| 2. Options Evaluated |
| 3. Decision Team Composition |
| 4. Analysis Guidelines Received |
| 5. Business Case Team Members |
| 6. Business Case Analysis Process and Resources |
| II. Executive Summary |
| A. Recommendation |
| B. Summary of Value Results |
| 1. Financials (Tangible factors) |
| 2. Match to Balanced Scorecard |
| 3. Intangible Factors |
| 4. Risk Analysis |
| 5. Sensitivity Analysis |
| C. Next Actions |
| III. Analysis |
| A. Key Assumptions of Analysis |
| B. Value Analysis Results |
| 1. Top Benefits |
| 2. Key Metrics Improvements/Key Intangibles |
| 3. ValueBoard/Balanced Scorecard View |
| 4. Value Ladders/Balanced Scorecard View |
| 5. Tangibles Worksheet |
| 6. Risk Analysis |
| 7. Sensitivity Analysis |
| C. Next Actions |

Appendices

- Appendix A-1: People Contributing to This Business Case Analysis
- Appendix A-2: Financial Results by Year (IRR, NPV, ROI)
- Appendix A-3: PayoffCard Profiles (Discussion of Each Payoff Area)
- Appendix A-4: Business Case Analysis Process Used

List of Exhibits

| EXH. # | Exhibit Title |
|--------|--|
| A.1 | Summary of Intranet GKB Business Value to ABC Corporation |
| A.2 | Executive Summary of Tangible Benefits |
| A.3 | Financial Comparison: GKB versus ABC Hurdle Rates |
| A.4 | Top Benefits Ranked by Payoff Amounts |
| A.5 | Key Metrics Improvements/Key Intangibles |
| A.6 | Balanced Scorecard ValueBoard of Key Payoff Areas |
| A.7 | Balanced Scorecard ValueBoard with Value Ladders |
| A.8 | Tangibles Worksheet for ABC Corporation's GKB Business Case |
| A-3.1 | PayoffCard: Increase Competitive Advantage |
| A-3.2 | PayoffCard: Increase Engineering Productivity |
| A-3.3 | PayoffCard: Increase Enterprise Flexibility |
| A-3.4 | PayoffCard: Increase Profit via GKB Cost Savings |
| A-3.5 | PayoffCard: Make Better New Product Decisions |
| A-3.6 | PayoffCard: Reduce Communication and Print Material Costs |
| A-3.7 | PayoffCard: Reduce Content Manager Skill Requirements |
| A-3.8 | PayoffCard: Reduce Customer Turnover |
| A-3.9 | PayoffCard: Reduce Engineer Turnover |
| A-3.10 | PayoffCard: Reduce Risk of GKB Project Failure |
| A-3.11 | PayoffCard: Reduce Risk of Security Breaches |
| A-3.12 | PayoffCard: Reduce Total Cost of Ownership (TCO) |
| A-4.1 | Seven-Step VALUE-on-Demand Methods for Building Business Cases |
| A-4.2 | Data Flow for VALUE-on-Demand Business Case Development |

Section I : Introduction

A. Business Drivers Triggering This Business Case

ABC Corporation, as a medium-sized manufacturer of specialized test equipment sold to electronic product manufacturers worldwide, has an annual revenue of \$520 million. ABC ranks second in size to the leading competitor, Global Testing, Inc. Sixty percent of ABC's revenues are from North America, while 40 percent originate from Europe, South America, and Asia.

In recent years ABC has come under increasing market pressure from both global and regional competitors. Executives have determined that in order to reduce serious competitive inroads into key markets, the firm must increase revenues by 15 percent per year while simultaneously expanding the firm's ability to flexibly respond to new market developments. In order to achieve these two goals, the management committee has decided that ABC can best improve its competitive advantage by (1) winning more sales deals and (2) accelerating the introduction of more appealing new products.

For the past year ABC's globally scattered new-product design teams have emphasized the importance (to their productivity) of getting faster and more cost-effective access to the firm's Global KnowledgeBase (GKB) of best-practices product design information. The GKB currently resides on three server systems, located in Paris, France; Dallas, Texas; and Singapore. Approximately 30 engineers, researchers, and others currently have direct access to the GKB electronically, while 30 others have phone access to a central content research staff who inquire into the GKB for them and then e-mail, fax, or Express Mail the results.

In order to respond to management's call for rapid introduction of more successful new products (and also to assist sales in closing more deals by increasing the quality of customer proposals), Craig West, ABC's chief information officer (CIO), has recommended that management provide funds for upgrading and installing the Global KnowledgeBase onto an intranet. This would provide direct and easier access for more engineers, regardless of location, as well as reduce numerous costs.

ABC's senior management has expressed interest in the intranet suggestion, and has thus asked that a business case be constructed to provide more specifics on costs, savings, level of investment, and payback period. In response to this request, the Business Case Evaluation Team was formed. This document is the output of the team's efforts.

B. Scope of the Business Case Analysis

- 1. Purpose of This Business Case
The purpose of this business case is to assess the business value of an investment in the acquisition and implementation of an intranet-based Global KnowledgeBase from Guidance Software during the next fiscal year.
- 2. Options Evaluated
The two options considered were:
 - Contract for and install an intranet-based solution from Guidance Software called Global Engineer Designer,
 - Continue using the status quo (in-house-developed, client-server-based) solution, which has been installed and has been in operation at three product design locations of ABC (Dallas, Texas; Paris, France; and Singapore) for the past four years.
- 3. Decision Team Composition

| Role in the Decision Process | Name, Responsibility/Title |
|------------------------------|---|
| Decision Makers | Jewel Weston, Chairman of the Board Ron Black, CEO |
| Decision Recommenders | Jerry Whitman, CFO Craig West, CIO |
| Decision Influencers | Clayton Bell, VP Operations Helena Blackenberry, VP Manufacturing Jose Morez, VP Marketing Eileen Whalen, VP Worldwide Sales Christine Woo, Director New Product Development Randy Zanlaski, Global Director, Engineering Design |

These people have been identified as the decision participants for the go/no-go decision concerning the Global KnowledgeBase opportunity. Members of the IT Evaluation Committee (ITEC) include those in the “Decision Recommenders” and “Decision Influencers” only. These decision participants are the audience for this business case.

- 4. Analysis Guidelines Received

The following analysis guidelines were received from the decision team:

| Guideline Topic | Guideline Received |
|------------------------------------|--|
| Time frame of analysis | 5 years |
| Financial formulas (hurdle rates)* | Internal rate of return (IRR) (30%) Net present value (NPV) (\$1 million) Return on investment (ROI) (25%) Payback period (payback) (24 months) |
| Duration of analysis | 4 weeks |
| People resources of team | 7 people; maximum of 15 person-weeks total to be expended |
| Format of deliverables | <ul style="list-style-type: none">• Written report 35 pages or less (not including appendices)• 60-minute presentation to IT Evaluation Committee |
| Special factors | Assess risk of project problems, special risks unique to option selected |
| Due date of business case | November 19 |

**Hurdle rates are the minimally acceptable financial results.*

5. Business Case Team Members
Business case team members are:

| | |
|------------------------|--|
| Team Leader | Barry Williams, Director of Product Design |
| Team Members | Evelyn Chung, Systems Analyst Mark Fabreney, Content Manager Quita Ortega, Director of Finance Shanti Wittcome, Product Design Engineer |
| Team Executive Sponsor | Patti Perowski, VP Sales, Global Accounts |
| Special Adviser | Bryce Branson, Partner, ACME Consulting |

6. Business Case Analysis Process and Resources
The people consulted and process used for this business case development are outlined in Appendices A-1 and A-4, respectively.

Section II: Executive Summary

A. Recommendation

ABC Corporation should immediately install the intranet GKB. It has an IRR of 109 percent, an NPV of over \$3 million, an ROI of 125 percent, and

a payback period of 12.5 months—all much better than ABC’s hurdle rates. Intangible advantages include enhancing ABC’s competitive advantage via more, better new products, thus increasing revenues and profits.

B. Summary of Value Results

Improving engineering productivity and loyalty are the main, core advantages of the intranet GKB solution. These benefits translate into improving the quality and quantity of new products, a key for enhancing ABC’s competitive advantage and thus its revenue. This crucial cause and effect is illustrated in Exhibit A.1.

One of ABC’s largest customers, Jose Whittenstein, chief executive officer (CEO) of Allied Manufacturers, said it best: “I prefer doing business with ABC, but I won’t accept late, second-rate product designs. Get me better new products, faster, and we’ll double our business with you.”¹

1. Financial (Tangible Factors)

For the five-year period, the intranet-based GKB solution’s IRR is 109 percent, ROI is 125 percent, NPV is over \$3 million, and the payback

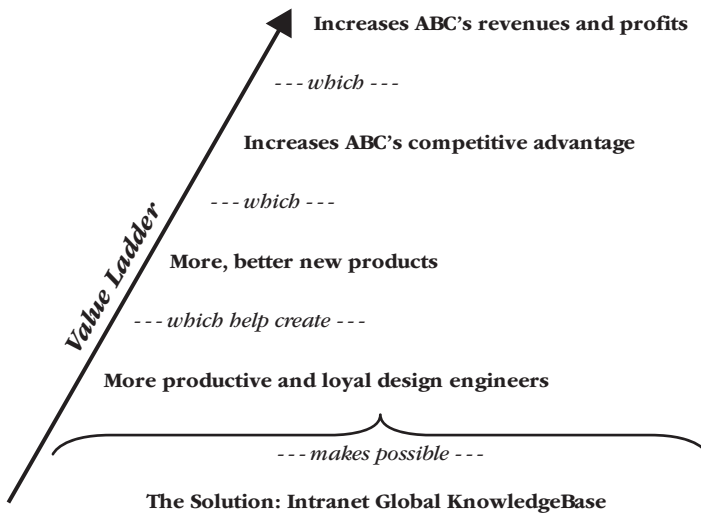


EXHIBIT A.1 Summary of Intranet GKB Business Value to ABC Corporation

1. Quote during ABC’s annual Client Conclave, Brussels, Belgium, August 10.

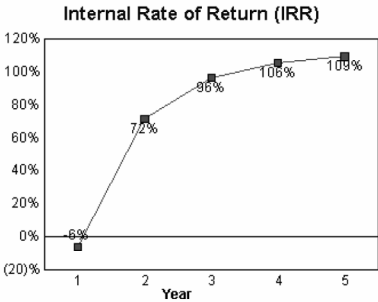
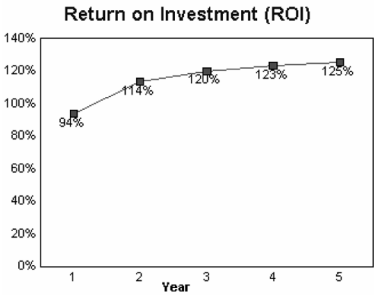
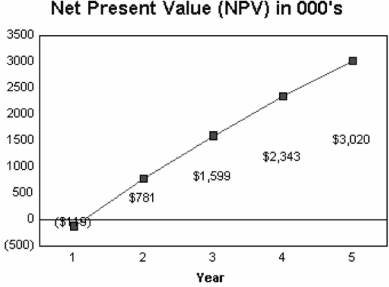
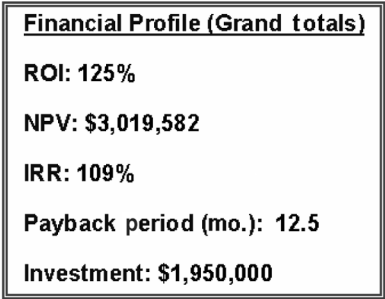


EXHIBIT A.2 Executive Summary of Tangible Benefits

EXHIBIT A.3 Financial Comparison: GKB versus ABC Hurdle Rates

| Factor | Business Case Result | Hurdle Rate | Intranet GKB is . . . |
|----------------|----------------------|-------------|---|
| IRR | 109% | 30% | Over three times greater than the hurdle rate |
| NPV | \$3,019,582 | \$1,000,000 | Triple the hurdle rate NPV |
| Payback period | 12.5 months | 24 months | One-half faster than the hurdle rate |
| ROI | 125% | 25% | Five times greater than the hurdle rate |

period is 12.5 months. The financial results in Exhibit A.2 show that cumulative value continues to increase for each year of the five-year period. Financial results from the intranet GKB greatly exceed all hurdle rates. (See Exhibit A.3.)

2. Match to Balanced Scorecard

The 12 payoff areas discussed in this business case have an excellent match to all four levels of the Balanced Scorecard² strategy and performance measurement system in use by ABC (see Exhibits A.6 and A.7).

3. Intangible Factors

One of senior management's most emphatic goals is to increase ABC's competitive advantage in the marketplace. A large number of quantified payoff areas directly support this intangible (nonquantified) goal. For more detail, see the ValueBoard and Value Map (Sections III.B.3 and 4).

4. Risk Analysis

Risk A (GKB project failure or shortfall) = medium

Risk B (security breaches) = low

5. Sensitivity Analysis

This business case is considered "moderately" sensitive to changes in assumptions.

C. Next Actions

Management is urged to make this GKB decision within the next 30 days. The direct cost of decision delay exceeds \$50,000 monthly, due to postponement of benefits. A key payoff area, "Increasing competitive advantage," is also negatively impacted, thus delaying revenue and profit increases, one of management's top goals.

Section III: Analysis

A. Key Assumptions of Analysis

- All costs and benefits are incremental to the option of continuing with the existing client-server system.
- The new intranet GKB is to be installed the second quarter of ABC's next fiscal year. Thus, all payoff area calculations reflect 75 percent of full-year benefits for Year 1 of this analysis, rather than 100 percent. The remainder of Years 2 through 5 reflects 100 percent.
- Only high-level costs are shown in this business case. Detailed cost calculations can be obtained by requesting the document "Detailed Cost Analysis of Intranet versus Client Server-Based Global KnowledgeBase" from the finance department.

2. ABC's Balanced Scorecard initiative conforms to the methods as outlined in Robert Kaplan and David Norton's seminal books on this topic.

B. Value Analysis Results

1. Top Benefits (See Exhibit A.4)
 - Almost one-half of all savings come from the top three payoff areas.
 - One-third of the benefits come from the top two payoff areas related to engineering savings (“Increase engineering productivity” and “Reduce engineer turnover”).
 - The top five payoff areas are relatively close to each other in size of savings.
2. Key Metrics Improvements/Key Intangibles

The forecast for base-period-to-target improvements per payoff area, shown in Exhibit A.5, requires relatively small increases. The two largest savings areas, “Increase engineering productivity” and “Reduce engineer turnover” (shown in Exhibit A.4) for example, only require a four-percentage-point improvement. Details on these numbers are contained in Appendix A-1 (PayoffCard Profiles).
3. ValueBoard/Balanced Scorecard View

The 12 payoff areas of this business case are shown below in Exhibit A.6, aligned in a Balanced Scorecard format. Each payoff area is

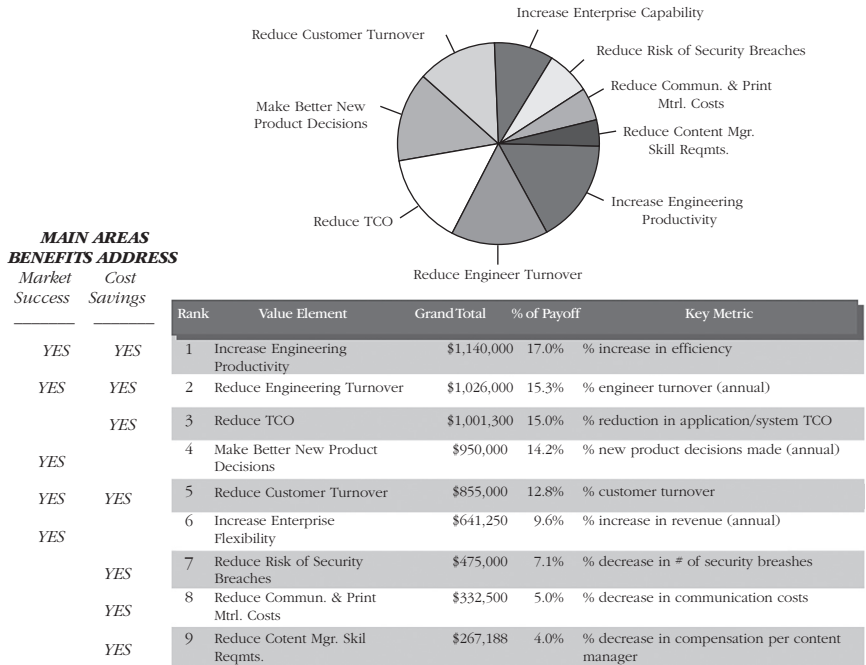


EXHIBIT A.4 Top Benefits Ranked by Payoff Amounts

EXHIBIT A.5 Key Metric Improvements/Key Intangibles

| Value Element Name/Key Metric | Base Period | Target | Units of Improvements |
|--|-------------|--------|-----------------------|
| Increase engineering productivity % increase in efficiency | 0% | 4% | 4% |
| Increase enterprise flexibility % increase in revenue (annual) | 0.0% | 0.5% | 0.5% |
| Make better new product decisions # of new product decisions made (annual) | 4 | 4 | 0 |
| Reduce commun. & print material costs % decrease in communications costs | 0% | 20% | 20% |
| Reduce content manager skill requirements % decrease in compensation per content manager | 0% | 15% | 15% |
| Reduce customer turnover % customer turnover | 15% | 14% | -1% |
| Reduce engineer turnover % engineer turnover (annual) | 15.0% | 11.0% | -4.0% |
| Reduce risk of security breaches % decrease in # of security breaches | 0% | 20% | 20% |
| Reduce TCO % reduction in application/system TCO | 0.0% | 7.0% | 7.0% |
| Increase competitive advantage | Medium | | |
| Increase profit via GKB cost savings | Medium | | |
| Reduce risk of GKB project failure | High | | |

positioned on the Balanced Scorecard level (“Financial,” “Customer,” “Process,” and “Employee Learning and Growth”) that most represents its focus.

Note that the payoff areas are relatively well balanced among the four Balanced Scorecard levels, as well as between “Market Success” (left side of the ValueBoard) and “Cost Savings (right side of the ValueBoard). Also note that:

- Three payoff areas have an exclusive Market Success focus (“Increase enterprise flexibility,” “Make better product decisions,” and “Increase competitive advantage”).

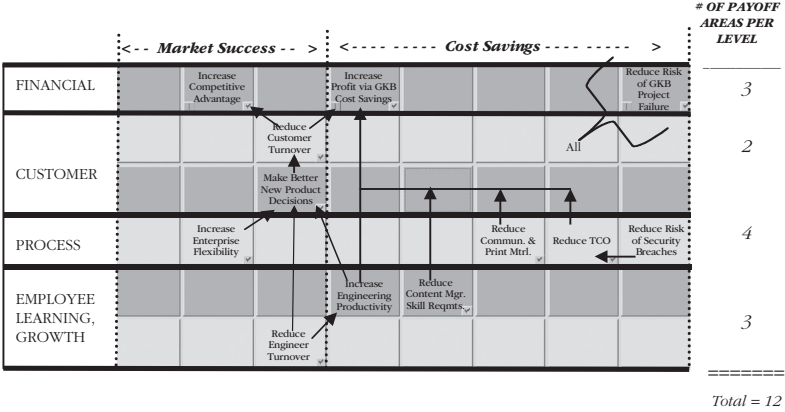


EXHIBIT A.6 Balanced Scorecard ValueBoard of Key Payoff Areas

- Four have an exclusive Cost Savings focus (“Reduce content manager skill requirements,” “Reduce communications and print material costs,” “Reduce TCO,” and “Reduce risk of security breaches”).
- Three payoff areas have both a Market Success and Cost Savings focus (“Reduce engineering turnover,” “Increase engineering productivity,” and “Reduce customer turnover”).
- “Reduce risk of GKB project failure” applies to the entire set of payoff areas on the ValueBoard.

For details concerning the calculations, assumptions, and rationale behind each payoff area, see Appendix A-3 (PayoffCard Profiles).

4. Value Ladders/Balanced Scorecard View

The Value Map shown in Exhibit A.7 is a visual display of the primary value theme of this business case, which is:

The main advantage of the GKB solution is that it significantly improves engineering productivity and loyalty. This, in turn, helps to improve the quality and quantity of new-product designs, a factor ABC executives have identified as crucial for enhancing ABC’s competitive advantage and thus its revenues and profits.

5. Tangibles Worksheet

The primary costs and benefits that constitute the financial results of this business case are shown in the Tangibles Worksheet in Exhibit A.8. In addition to a summary of the financial results, this document shows that the intranet GKB option has a total five-year cost of

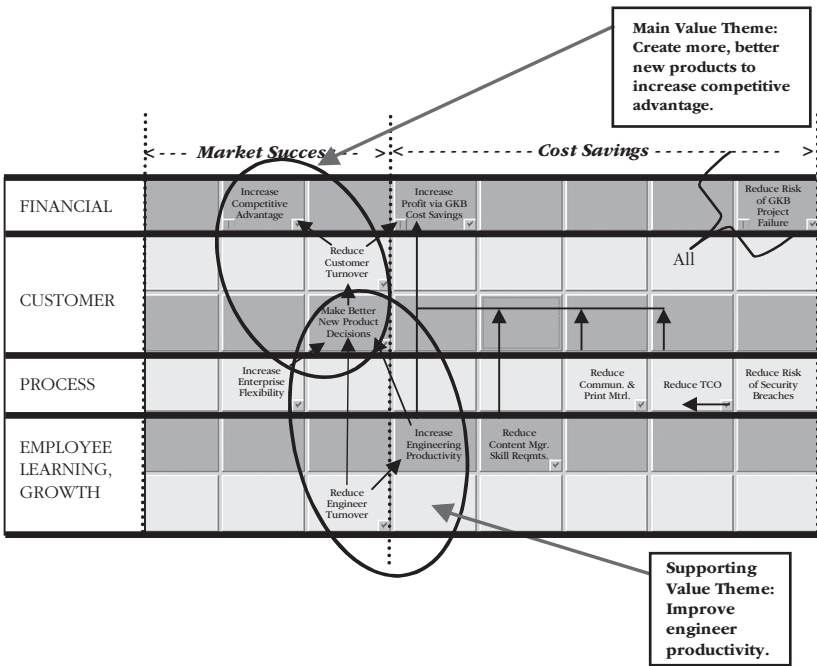


EXHIBIT A.7 Balanced Scorecard ValueBoard with Value Ladders

\$1,950,000. Total net benefits during this time frame are \$5,638,237, yielding a total net cash-flow result of \$4,738,237.

Each line item in the “Payoff” section is the summary of the calculations presented in the corresponding PayoffCard shown in Appendix A-3.

6. Risk Analysis

Two types of risks were evaluated at management’s request. More sophisticated risk analyses were deemed by management as not necessary.

The primary risk is considered to be GKB project failure or shortfall. It is judged to be a medium risk. Any systems project has an inherent risk factor due to the nature of its complexity and demands for change within an organization. Since the client-server option evaluated involves no change from current operation, the intranet solution has a relatively higher risk. However, this risk is reduced significantly due to the IT department’s recently enhanced intranet skills, plus the maturity of the Global Engineer Designer application software.

Results

| | | | |
|-----------------------|-------------|------|------|
| Payback Period (Mo.): | 12.5 | ROI: | 125% |
| NPV | \$3,019,582 | IRR: | 109% |

Costs

| Costs | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Grand Total |
|--------------------------|---------|---------|---------|---------|---------|---------|-------------|
| Software License Fees | 200,000 | | | | | | |
| Installation Costs | 600,000 | | | | | | |
| Hardware Costs | 100,000 | | | | | | |
| Annual Maintenance Fees | | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 300,000 |
| Other Ongoing Expenses | | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 750,000 |
| Total All Costs Per Year | 900,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 1,950,000 |

Payoffs

| Level | Value Element | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Grand Total |
|---------------------------|----------------------------|-----------|-----------|-----------|-----------|-----------|-------------|
| CEO/CFO | Increase Enterprise Flexib | 101,250 | 135,000 | 135,000 | 135,000 | 135,000 | 641,250 |
| SALES & MARKETING | Reduce Customer Turnove | 135,000 | 180,000 | 180,000 | 180,000 | 180,000 | 855,000 |
| SALES & MARKETING | Make Better New Product I | 150,000 | 200,000 | 200,000 | 200,000 | 200,000 | 950,000 |
| PRODUCT ENGINEERING | Reduce Engineer Turnove | 162,000 | 216,000 | 216,000 | 216,000 | 216,000 | 1,026,000 |
| PRODUCT ENGINEERING | Increase Engineering Prod | 180,000 | 240,000 | 240,000 | 240,000 | 240,000 | 1,140,000 |
| CENTRAL RESOURCES | Reduce Commun. & Print N | 62,500 | 70,000 | 70,000 | 70,000 | 70,000 | 332,500 |
| CENTRAL RESOURCES | Reduce Content Mgr. Skill | 42,188 | 56,250 | 56,250 | 56,250 | 56,250 | 267,188 |
| IS | Reduce Risk of Security Br | 75,000 | 100,000 | 100,000 | 100,000 | 100,000 | 475,000 |
| IS | Reduce TCO | 158,100 | 210,800 | 210,800 | 210,800 | 210,800 | 1,001,300 |
| Total Payoff Per Year | | 1,056,037 | 1,408,050 | 1,408,050 | 1,408,050 | 1,408,050 | 6,688,237 |
| Total Net Payoff Per Year | | 846,037 | 1,198,050 | 1,198,050 | 1,198,050 | 1,198,050 | 5,638,237 |
| Net Cash Flow Per Year | | -900,000 | 846,037 | 1,198,050 | 1,198,050 | 1,198,050 | 4,738,237 |

Summary

EXHIBIT A.8 Tangibles Worksheet for ABC Corporation's Global KnowledgeBase Business Case

A secondary risk is security breaches. It is considered to be a low risk with the intranet GKB option. Although intranet solutions are generally considered more prone to such breaches than client-server, the architectural design of the Global Engineer Designer includes many state-of-the-art security features that reduce these risks significantly.

For details see the discussion of these two risks in Appendix A-3 (PayoffCard Profiles).

7. Sensitivity Analysis

This business case is considered “moderately” sensitive to changes in data assumptions. For example, “Improving engineering productivity” constitutes 17 percent of all monetary benefits, based on a 4 percent improvement in efficiency. Varying this efficiency improvement factor, plus or minus 2 percentage points, moves the payback period down to 11.5 or up to 13.5 months, respectively. This 4 percent improvement factor is considered conservative.

In addition, as shown on the Executive Summary report, the IRR, NPV, and ROI improve for each additional year of this cost-benefit analysis. For example, returns on these financial parameters on the basis of a five-year analysis period are greater than if the analysis were done on a four-year basis. The same is true for a three-year or two-year analysis.

C. Next Actions

It is recommended that management select the intranet GKB investment option within the next 30 days. The direct decision delay cost is more than \$50,000 monthly in terms of postponement of benefits. [NPV of \$3,019,582/time period of analysis of five years (i.e., 60 months).] In addition, a key intangible factor, “Increasing competitive advantage,” is also negatively impacted by a decision delay.

It is also recommended that this business case document should form the basis for the project management system for tracking and reporting the actual realization of benefits from whichever option selected from this business case.

Appendices

Appendix A-1

People Contributing to This Business Case Analysis
(in addition to the Business Case Team)

| Name | Group | Business Case Role |
|-------------------|----------------------------|-----------------------------------|
| Doris Andersen | Product Design | Reviewer |
| Lester Anzivino | Information Technology | Research: Intranet software users |
| Kirsten Argo | Information Technology | Reviewer |
| Kellie Brown | Finance and Administration | Data Contributor |
| Walter Cannara | Finance and Administration | Data Contributor |
| Geraldine Careman | Executive Staff | Reviewer |
| Amanda Crossman | New Product Development | Reviewer |
| Mike Cummington | Sales and Marketing | Research: Customer impacts |
| Scott Danneska | Logistics | Research: Supply chain impacts |
| Lenny Deal | Executive Staff | Reviewer |
| David DeAngeles | New Product Development | Research: Market directions |
| Francesca Farrell | Marketing Research | Research: Third-party citations |
| Martha Hanson | Engineering | Researcher: Solution drivers |
| Kayla Hopman | Information Technology | Researcher: Vendor due diligence |
| Dawn Landing | International Operations | Research: People impacts |
| Judy Livingston | Marketing | Research: Market |
| Alice Longview | Marketing | Reviewer |
| John Mac | Information Technology | Reviewer |
| Matt Mayerton | Headquarters | Reviewer |
| Bill Morrison | Customer Services | Reviewer: Customer impacts |
| Kevin Rushman | Field Operations | Reviewer |
| Herb Shipman | Sales | Data Contributor |

(continued)

| Name | Group | Business Case Role |
|---------------------|----------------------------|-----------------------------|
| Kevin Sumatra, Jr. | Finance and Administration | Data Contributor |
| Suzanne Triggerson | Accounting | Research: Financial impacts |
| Chris Waleski | Headquarters | Reviewer |
| Dorthea Wang | Headquarters | Reviewer |
| Yvette Waters | Product Design | Research: Evidence |
| Martin Watkins | Human Resources | Data Contributor, Reviewer |
| Yolanda Whittenberg | Human Resources | Data Contributor |

Appendix A-2

Financial Results by Year

Internal Rate of Return (IRR)

| Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total all costs per year: | | | | | | |
| \$900,000 | \$210,000 | \$210,000 | \$210,000 | \$210,000 | \$210,000 | \$1,950,000 |
| Total payoff per year: | | | | | | |
| | \$1,056,037 | \$1,408,050 | \$1,408,050 | \$1,408,050 | \$1,408,050 | \$6,688,237 |
| Net cash flow per year: | | | | | | |
| −\$900,000 | \$846,037 | \$1,198,050 | \$1,198,050 | \$1,198,050 | \$1,198,050 | \$4,738,237 |
| IRR | −6% | 72% | 96% | 106% | 109% | *** |

Net Present Value (NPV)

| Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total all costs per year: | | | | | | |
| \$900,000 | \$210,000 | \$210,000 | \$210,000 | \$210,000 | \$210,000 | \$1,950,000 |
| Total payoff per year: | | | | | | |
| | \$1,056,037 | \$1,408,050 | \$1,408,050 | \$1,408,050 | \$1,408,050 | \$6,688,237 |
| Net cash flow per year: | | | | | | |
| \$2900,000 | \$846,037 | \$1,198,050 | \$1,198,050 | \$1,198,050 | \$1,198,050 | \$4,738,237 |
| NPV | \$−118,977 | \$781,135 | \$1,599,420 | \$2,343,314 | \$3,019,582 | |

Return on Investment (ROI)

| Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Total |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Total all costs per year: | | | | | | |
| \$900,000 | \$210,000 | \$210,000 | \$210,000 | \$210,000 | \$210,000 | \$1,950,000 |
| Total payoff per year: | | | | | | |
| | \$1,056,037 | \$1,408,050 | \$1,408,050 | \$1,408,050 | \$1,408,050 | \$6,688,237 |
| Net cash flow per year: | | | | | | |
| \$−900,000 | \$846,037 | \$1,198,050 | \$1,198,050 | \$1,198,050 | \$1,198,050 | \$4,738,237 |
| ROI | 94% | 114% | 120% | 123% | 125% | |

Appendix A-3

PayoffCard Profiles

(alphabetical by title)

- Exhibit A-3.1: Increase Competitive Advantage
- Exhibit A-3.2: Increase Engineering Productivity
- Exhibit A-3.3: Increase Enterprise Flexibility
- Exhibit A-3.4: Increase Profit via GKB Cost Savings
- Exhibit A-3.5: Make Better New Product Decisions
- Exhibit A-3.6: Reduce Communication and Print Material Costs
- Exhibit A-3.7: Reduce Content Manager Skill Requirements
- Exhibit A-3.8: Reduce Customer Turnover
- Exhibit A-3.9: Reduce Engineer Turnover
- Exhibit A-3.10: Reduce Risk of GKB Project Failure
- Exhibit A-3.11: Reduce Risk of Security Breaches
- Exhibit A-3.12: Reduce TCO

PayoffCard Profiles

EXHIBIT A-3.1 “Increase Competitive Advantage”

FINDINGS

Better proposals and better selling new products increase our competitive advantage and thus ABC revenue and profits.

Definition:

Competitive advantage is the value-based uniqueness a firm achieves versus its competitors. Competitive advantage has “three generic strategies: cost leadership, differentiation, and focus.” Ref. 1. ABC uses a differentiation strategy of creating a steady stream of innovative new products.

Business Importance:

In recent years ABC has come under increasing market pressure from highly innovative global and regional competitors. In response, ABC executives wish to improve the firm’s competitive advantage and thus its revenue by launching more new products.

Solution Driver:

The intranet platform, due to quick access to a single, more accurate, unified database, allows engineers to provide faster and better response to sales needs for more competitive proposals and to design better-selling new products.

Evidence:

- “Competitive advantage is at the heart of a firm’s performance in competitive markets.” Ref. 2.
- “One of our key strategic goals is differentiation. We plan to achieve this goal by introducing newer, better products faster. Any ABC initiative that enables product development is likely to be an initiative that management can get behind.” Ref. 3.

References:

- Refs. 1, 2: *Competitive Advantage: Creating and Sustaining Superior Performance*, Michael Porter, Free Press, New York, 1985, pp. xvi, xv.
- Ref. 3: M. Powers, CEO of ABC Corp. at the annual companywide meeting, October 2002.

Comments:

Intangible PayoffCard

Key assumption: An improvement in competitive advantage proportionally increases the firm’s contribution (i.e., its operating margin). “Other factors” include contribution from internal groups such as F&A, HR, IT, and so on.

EXHIBIT A-3.2 “Increase Engineering Productivity”

FINDINGS

By increasing engineering efficiency by 4 percent, over \$1 million can be saved.

Definition:

Improvement in productivity of design engineers so they have time to do more new-product designs.

Business Importance:

More productive engineers increase the opportunity to use their highly valued design skills in ways most useful to ABC Corp.

(continued)

EXHIBIT A-3.2 (Continued)

Solution Driver:

Collaborative features of an intranet solution allow for engineers to reduce (1) training time away from the job and (2) time to acquire knowledge. The solution also allows new hires to learn faster.

Calculations:

| | | Base Period | Target | # Change | % Change |
|-----------------------------------|---|-----------------------|----------------|----------------|----------------|
| Key Metric <small>more...</small> | | | | | |
| A | % increase in efficiency | 0% | 4% | 4% | 0% |
| Variables <small>more...</small> | | | | | |
| B | Compensation per engineer (average, annual) | \$100,000 | \$100,000 | \$0 | 0% |
| C | # of engineers doing new product design | 60 | 60 | 0 | 0% |
| Formulas <small>more...</small> | | | | | |
| D | Total labor cost of new product design (annual): ((100%(T)-A)*B)*C | \$6,000,000 | \$5,760,000 | -\$240,000 | -4% |
| E | Annual savings: increase engineering productivity: (D(B)-D(T)) | | \$240,000 | | |
| % annual change: | | 1 Year 75% | 2 Year 100% | 3 Year 100% | 4 Year 100% |
| | | 5 Year 100% | | | |
| F | Annual savings: increase engineering productivity: (D(B)-D(T)) | \$180,000 | \$240,000 | \$240,000 | \$240,000 |
| | | GRAND TOTAL All Years | | | \$1,140,000 |

Evidence:

- “The valuation of companies has changed . . . , putting a higher value on . . . knowledge, competence, brands, and systems. . . . It is the . . . people alone—the ‘human capital’—who build the value.” Ref. 1.
- “Efficiency of engineers increases significantly when they are given access to collaborative tools that make their jobs easier to learn and do.” Ref. 2.

References:

- Ref. 1: *The Human Value of the Enterprise: Valuing PEOPLE as Assets—Monitoring, Measuring, Managing*, Andrew Mayo, 2001, p. 2.
- Ref. 2: 2001: *Survey of Mid-Sized Engineering Firms*, ABC Staff Survey, 2002, Fall p. 22.

Notes:

“% increase in efficiency” in calculations derived from the following assumptions: (1) Current training costs can be cut by 25 percent from avg. of training 10 engineers/yr @ \$10,000 per engineer; (2) engineers can save an avg. of 1 hour/access/month per engineer.

EXHIBIT A-3.3 “Increase Enterprise Flexibility”

FINDINGS

The ability to more quickly respond to market changes will yield an additional \$600,000 savings.

Definition:

Ability of organizations to quickly and economically change strategy, structure, and/or resources in response to market changes. ABC executives’ goal is to flexibly respond to new market developments.

Business:

Uncommon business flexibility is a critical success factor for organizations facing major changes in demand, supply, market reach, customer expectations, entry of new competitors, and so on.

Solution Driver:

The intranet platform will allow engineers instant worldwide access to higher-quality and more frequently updated information, thereby accelerating new-product creation more closely attuned to market needs.

Calculations:

| | | Base Period | Target | # Change | % Change | |
|---------------------------------|--|---|---|-----------|-----------|-----------|
| Key Metric more... | | | | | | |
| A | % increase in revenue (annual) | <input type="text" value="0.0%"/> | <input type="text" value="0.5%"/> | 0.5% | 0% | |
| Variables more... | | | | | | |
| B | Ratio of variable cost increase to revenue increase | <input type="text" value="0.6"/> | <input type="text" value="0.6"/> | 0.0 | 0% | |
| C | Cost of goods sold (annual - base period) | <input type="text" value="\$15,000,000"/> | <input type="text" value="\$15,000,000"/> | \$0 | 0% | |
| D | Cost of operations (annual - base period) | <input type="text" value="\$20,000,000"/> | <input type="text" value="\$20,000,000"/> | \$0 | 0% | |
| E | Cost of overhead (general & admin.) and other (annual) | <input type="text" value="\$5,000,000"/> | <input type="text" value="\$5,000,000"/> | \$0 | 0% | |
| F | Cost of changeovers (annual) | <input type="text" value="\$5,000,000"/> | <input type="text" value="\$5,000,000"/> | \$0 | 0% | |
| Formulas more... | | | | | | |
| G | Total all costs (annual - base period): (((100%-[1]*(A*B)))*(C+D+E+F))) | \$45,000,000 | \$45,135,000 | \$135,000 | 0% | |
| H | IMPACT: increase enterprise flexibility: (G[T]-G[B]) | | \$135,000 | | | |
| | | 1 Year | 2 Year | 3 Year | 4 Year | |
| | | % annual change: <input type="text" value="75%"/> <input type="text" value="100%"/> <input type="text" value="100%"/> <input type="text" value="100%"/> <input type="text" value="100%"/> | | | | |
| I | IMPACT: increase enterprise flexibility: (G[T]-G[B]) | \$101,250 | \$135,000 | \$135,000 | \$135,000 | \$135,000 |
| | | GRAND TOTAL All Years | | | | \$641,250 |

Evidence:

- “To be industry leaders, they must be adaptive, flexible, and quick to respond to change.” Ref. 1.

(continued)

EXHIBIT A-3.3 (Continued)

- “. . . an entire organization is an ongoing balancing act (of) . . . setting direction, linking processes and systems and making CONSTANT adjustments.” Ref. 2.
- “As markets change, so too must an engineering firm quickly adjust or be left behind as an also-ran. Technology systems are critical for these firms to adapt to new market needs.” Ref. 3.

References:

- Refs. 1, 2: *The Power of Alignment*, George Labovitz & Victor Rosansky, 1997, pp. 14, 15.
- Ref. 3: *Critical Success Factors for Engineering Firms in the New Economy*, S. Ericks, ABC research staff, 2001, p. 36.

EXHIBIT A-3.4 “Increase Profit via GKB Cost Savings”

FINDINGS

An additional \$3.9 million profit contribution will be realized from all cost savings payoff areas outlined in this business case.

Definition:

Cost savings at ABC Corp. which improve profits include (1) reducing engineering, content management, sales, and IS labor costs and (2) decreasing the use of communication and print materials.

Business Importance:

Bottom-line cost savings are a crucial metric for measuring the effectiveness of management actions, as well as for reporting business results to both internal and external stakeholders.

Solution Driver:

The following intranet-based GKB features contribute to ABC cost savings: common look and feel, consistency of operation, unified view, low skill demands on users, ease of learning, and personal computer independence.

Evidence:

- “Engineering firms are notorious for having some of the highest cost structures in the world. Prime areas for shaving costs include: labor and goods/services.” Ref. 1.

Reference:

- Ref. 1: *How ABC Corp. Can Thrive in an Increasingly Competitive Landscape*, B. Keller, COO, ABC Corp., Employee Meeting, Jan. 8, 2002.

Comments:

Five payoff areas contribute to this PayoffCard: “Reduce customer turnover,” “Reduce engineering turnover,” “Increase engineering productivity,” “Reduce content manager skill requirements,” “Reduce communications and print material costs,” and “Reduce TCO.” All calculations for these payoff areas are contained on their individual PayoffCards.

EXHIBIT A-3.5 “Make Better New Product Decisions”

FINDINGS

More timely and accurate new-product decisions will bring in an additional \$950,000.

Definition:

Senior management has a greater likelihood of choosing the most profitable new products to launch from a variety of candidates.

Business Importance:

An organization’s success is, ultimately, the sum total of the impact of its series of management decisions. This is especially true of a firm such as ABC that uses product innovation as a key competitive differentiator.

Solution Driver:

Due to the comprehensive, accurate, and easily accessible nature of the GKB, managers can better assess the validity and viability of proposed new-product designs.

Calculations:

| | | Base Period | Target | # Change | % Change | |
|---|--|--|--|-----------------------------------|-----------------------------------|-----------------------------------|
| Key Metric <input data-bbox="295 1123 343 1140" type="button" value="more..."/> | | | | | | |
| A | # of new product decisions made (annual) | <input type="text" value="4"/> | <input type="text" value="4"/> | 0 | 0% | |
| Variables <input data-bbox="295 1178 343 1196" type="button" value="more..."/> | | | | | | |
| B | Payoff per new product decision from current decision process (annual) | <input type="text" value="\$3,000,000"/> | <input type="text" value="\$3,000,000"/> | \$0 | 0% | |
| C | % of new product decisions to be improved | <input type="text" value="0%"/> | <input type="text" value="5%"/> | 5% | 0% | |
| D | Extra payoff per new product decision: more timely decisions | <input type="text" value="\$500,000"/> | <input type="text" value="\$500,000"/> | \$0 | 0% | |
| E | Extra payoff per new product decision: more accurate decisions | <input type="text" value="\$500,000"/> | <input type="text" value="\$500,000"/> | \$0 | 0% | |
| | | | | | | |
| Formulas <input data-bbox="295 1352 343 1369" type="button" value="more..."/> | | | | | | |
| F | Payoff from new prod. decisions made with current decision process (annual): (A*B) | \$12,000,000 | \$12,000,000 | \$0 | 0% | |
| G | Payoffs from better new product decisions (annual): (C*A)*(D+E) | \$0 | \$200,000 | \$200,000 | 0% | |
| H | Total payoffs from better new product decisions: (F+G) | \$12,000,000 | \$12,200,000 | \$200,000 | 2% | |
| I | Annual Savings: make better new product decisions: (F(B)-F(B))+(G(B)-G(B))+(H(T)-H(B)) | | \$200,000 | | | |
| | | | | | | |
| | | 1 Year | 2 Year | 3 Year | 4 Year | 5 Year |
| % annual change: | | <input type="text" value="75%"/> | <input type="text" value="100%"/> | <input type="text" value="100%"/> | <input type="text" value="100%"/> | <input type="text" value="100%"/> |
| J | Annual Savings: make better new product decisions: (F(B)-F(B))+(G(B)-G(B))+(H(T)-H(B)) | \$150,000 | \$200,000 | \$200,000 | \$200,000 | \$200,000 |
| | | GRAND TOTAL All Years | | | | \$950,000 |

(continued)

EXHIBIT A-3.5 (Continued)**Evidence:**

- “Decision making is arguably the most important job of the senior executive and one of the easiest to get wrong.” Ref. 1.
- “In our survey, those firms that were able to utilize a global database of product information were able to improve decision making (e.g., more accurate and more timely decisions) by almost 25%.” Ref. 2.

References:

- Ref. 1: “What You Don’t Know about Making Decisions,” David Garvin & Michael Roberto, *Harvard Business Review*, September 2001, p. 108.
- Ref. 2: 2001: *Survey of Mid-Sized Engineering Firms*, ABC Research Group, Fall 2001, p. 18.

EXHIBIT A-3.6 “Reduce Communication and Print Material Costs”**FINDINGS**

A lesser consumption of services and supplies adds up to a savings of over \$300,000.

Definition:

A decrease in the consumption of services and supplies related to global product design. Examples are (1) communication: phone, fax, overnight mail, and (2) print materials: paper, binding costs of engineering drawings and specs.

Business Importance:

The reduced cost of these goods and services contributes directly to improved profits.

Solution Driver:

Many pieces of physical information are available in soft copy via the GKB, thus decreasing communications, mailing, and print materials costs.

Calculations:

| | Base Period | Target | # Change | % Change | | |
|--|---|-----------|-----------|-----------|-----------|----------|
| Key Metric more... | | | | | | |
| A | % decrease in communications costs | 0% | 20% | 20% | 0% | |
| Variables more... | | | | | | |
| B | Communications costs (annual) | \$50,000 | \$50,000 | \$0 | 0% | |
| C | % decrease in print materials costs | 0% | 50% | 50% | 0% | |
| D | Print materials costs (annual) | \$120,000 | \$120,000 | \$0 | 0% | |
| | | | | | | |
| Formulas more... | | | | | | |
| E | Total savings on communications and print materials costs (annual): (F+G) | \$170,000 | \$100,000 | -\$70,000 | -41% | |
| F | Total communications costs (annual): ((100%[1]-A)*B) | \$60,000 | \$40,000 | -\$10,000 | -20% | |
| G | Total print materials costs: ((100%[1]-C)*D) | \$120,000 | \$60,000 | -\$60,000 | -50% | |
| H | Annual savings: reduce commun. and print materials costs: (E[B]-E[T]) | | \$70,000 | | | |
| | | | | | | |
| <div><div>% annual change:</div><div><div>1 Year</div><div>2 Year</div><div>3 Year</div><div>4 Year</div><div>5 Year</div></div></div> | | | | | | |
| I | Annual savings: reduce commun. and print materials costs: (E[B]-E[T]) | \$52,500 | \$70,000 | \$70,000 | \$70,000 | \$70,000 |
| | | | | | | |
| GRAND TOTAL All Years | | | | | \$332,500 | |

Evidence:

- “Those firms that wisely utilize intranet-based systems can lower costs of communications and print materials by at least 20%.” Ref. 1.

Reference:

- Ref. 1: *How ABC Corp. Can Thrive in an Increasingly Competitive Landscape*, B. Keller, COO, ABC Corp. Employee Meeting, Jan. 8, 2000, p. 7.

EXHIBIT A-3.7 “Reduce Content Manager Skill Requirements”

FINDINGS

The GKB’s intranet-based architecture can be effectively used by lesser-skilled content managers at compensation levels 15 percent below those being used today, which will lower labor costs by over \$250,000.

Definition:

Decrease the skill level required for content managers to be effective.

(continued)

EXHIBIT A-3.8 “Reduce Customer Turnover”

FINDINGS

Faster, better new products cut customer turnover by 1 percentage point; saves \$855,000.

Definition:

Customer turnover: Ratio of those who leave during a given period of time to total customers at the beginning.

Business Importance:

Losing customers is not only expensive from a cost and profit margin point of view, but also risks negatively impacting the employees’ morale and ABC’s market image.

Solution Driver:

GKB enables product design engineers to respond faster to proposal requests. The proposals can be sent faster to existing customers with demanding time frames, who then experience “great service” that assists retention. Better new products with high appeal to existing customers can also be developed quickly.

Calculations:

| | | Base Period | Target | # Change | % Change |
|-----------------------------------|---|-----------------------|-------------|------------|-----------|
| Key Metric <small>more...</small> | | | | | |
| A | % customer turnover | 15% | 14% | -1% | -7% |
| Variables <small>more...</small> | | | | | |
| B | # of customers at start of year | 1,000 | 1,000 | 0 | 0% |
| C | Sales and other costs to replace a lost customer (average) | \$9,000 | \$9,000 | \$0 | 0% |
| D | Profits lost per customer leaving (average) | \$9,000 | \$9,000 | \$0 | 0% |
| Formulas <small>more...</small> | | | | | |
| E | Total of all costs due to customers leaving (annual): (F+G) | \$2,700,000 | \$2,520,000 | -\$180,000 | -7% |
| F | Total costs to replace lost customers (annual): (A*B*C) | \$1,350,000 | \$1,260,000 | -\$90,000 | -7% |
| G | Total lost profit contribution from customer turnover (annual): (A*B*D) | \$1,350,000 | \$1,260,000 | -\$90,000 | -7% |
| H | Annual IMPACT: reduce customer turnover: (E(B)-E(T)) | | \$180,000 | | |
| | | % annual change: | | | |
| | | 1 Year | 2 Year | 3 Year | 4 Year |
| | | 75% | 100% | 100% | 100% |
| I | Annual IMPACT: reduce customer turnover: (E(B)-E(T)) | \$135,000 | \$180,000 | \$180,000 | \$180,000 |
| | | GRAND TOTAL All Years | | | |
| | | | | | \$855,000 |

(continued)

EXHIBIT A-3.8 (Continued)

Evidence:

- “An increase in customer retention rates of 5 percent increases profits by 25% to 95%.” Ref. 1.
- “Decreasing customer turnover is one of the effective ways for us to increase profits.” Ref. 2.
- “. . . research . . . by James Heskett at the Harvard Business School . . . holds that the endgame of business is growth and profit, which are tied to the ability . . . to create customer loyalty & retention.” Ref. 3.

References:

- Ref. 1: *Loyalty Rules, How Today's Leaders Build Lasting Relationships*, F. F. Reichheld, 2001, p. 10.
- Ref. 2: Ron Black, CEO ABC Corp. at annual companywide meeting, October 2002.
- Ref. 3. *The Power of Alignment*, George Labovitz & Victor Rosansky, 1997, p. 15.

Notes:

“Cost to replace each customer leaving” includes expenses to find a replacement customer and the annual profit contribution lost from sales the departed customer did not generate.

EXHIBIT A-3.9 “Reduce Engineer Turnover”

FINDINGS

Engineers will experience higher productivity and morale due to the GKB, which will lead to a decrease of 4 percentage points in turnover, thus saving over \$1 million.

Definition:

Engineer turnover is the ratio of product design engineers leaving a company in a given period of time to total product design engineers at the beginning of that period.

Business Importance:

Cutting the rate of turnover of product design engineers not only saves the cost of recruiting, hiring, and training replacements, but also reduces the drain of key design engineers whose senior level of experience is needed for innovative new-product designs.

Solution Driver:

The existence of an innovative, state-of-the-art GKB enhances the productivity and morale of the engineering staff.

Calculations:

| | Base Period | Target | # Change | % Change | | |
|---|-----------------------|-----------|------------|-----------|-----------|-------------|
| Key Metric | more... | | | | | |
| A % engineer turnover (annual) | 15% | 11% | -4% | -27% | | |
| Variables | more... | | | | | |
| B Hiring costs per new engineer | \$20,000 | \$20,000 | \$0 | 0% | | |
| C Training costs per new engineer | \$20,000 | \$20,000 | \$0 | 0% | | |
| D Learning curve costs per new engineer | \$10,000 | \$10,000 | \$0 | 0% | | |
| E Compensation per new engineer (average, annual) | \$80,000 | \$80,000 | \$0 | 0% | | |
| F Job vacancy duration (months) | 6 | 6 | 0 | 0% | | |
| G # of engineers at start of year | 60 | 60 | 0 | 0% | | |
| Formulas | more... | | | | | |
| H Total engineer turnover costs (annual): (((B+C+D)+(E*(F/12(12))))*1) | \$810,000 | \$594,000 | -\$216,000 | -27% | | |
| I Engineers needed to fill vacancies from turnover (annual): (A*G) | 9 | 7 | -2 | -27% | | |
| J Annual savings: reduce engineer turnover: (H(B)-H(T)) | | \$216,000 | | | | |
| | | | | | | |
| | % annual change: | 1 Year | 2 Year | 3 Year | 4 Year | 5 Year |
| | | 75% | 100% | 100% | 100% | 100% |
| K Annual savings: reduce engineer turnover: (H(B)-H(T)) | \$162,000 | \$216,000 | \$216,000 | \$216,000 | \$216,000 | |
| | GRAND TOTAL All Years | | | | | \$1,026,000 |

Evidence:

- “It takes a typical Silicon Valley firm only two years to lose half its employees.” Ref. 1.
- “The costs to replace a top-notch engineer (to include: hiring, training, learning curve costs, etc.) can far exceed most of the other avoidable costs of an enterprise.” Ref. 2.

References:

- Ref. 1: Loyalty Rules, *How Today's Leaders Build Lasting Relationships*, F. F. Reichheld, 2001, p. 1.
- Ref. 2: *Critical Success Factors for Engineering Firms in the New Economy*, S. Ericks, ABC research staff, 2001, p. 15.

EXHIBIT A-3.10 “Reduce Risk of GKB Project Failure”

FINDINGS

Proven GKB architecture combined with experienced ABC personnel significantly reduces the likelihood of project problems.

Definition:

Project failure is (1) the inability to implement the project on time and on budget or (2) the project never getting implemented. Risk is defined in terms of the likelihood of this failure happening as well as its magnitude.

(continued)

EXHIBIT A-3.10 (Continued)

Business Importance:

Reducing risk is especially important since penalties of failure are high: (1) Project funds are lost, (2) opportunity costs are significant (a failed GKB could threaten ABC's revenue goals), and (3) there is a negative impact on the morale of hard-to-replace engineers.

Solution Driver

ABC has a higher degree of technical skills for an intranet project option than a client-server option. In addition, the proven success of the intranet GKB application in similar companies helps reduce the risk of engineers not actively embracing the system.

Evidence:

- "A big impact on the success of a knowledge repository project is the reliability of the technical architecture and the availability of skilled technical personnel." Ref. 1.

References:

- Ref. 1: "How to Make Sure That Knowledge Repository Projects Succeed," David Delaney, ABC IT Advisor, white paper Sept. 30, 2002. *Data Warehousing Journal*, June 2001, p. 20.

Notes:

Intangible PayoffCard.

EXHIBIT A-3.11 "Reduce Risk of Security Breaches"

FINDINGS

A 20 percent decrease in security breaches saves almost \$500,000.

Definition:

Security breaches include events and activities such as virus attacks, hacker penetration, and competitive espionage. "Reducing the risk" means decreasing the frequency as well as the severity of the occurrences.

Business Importance:

Consequences of security breaches include loss of intellectual property, productivity penalties from the reduction of the uptime reliability of the GKB, as well as the cost to find the breach and repair it.

Solution Driver:

The architectural design of the GKB inherently provides an unusually high level of security protection.

Calculations:

| Key Metric <input data-bbox="311 401 357 418" type="button" value="more..."/> | | Base Period | Target | # Change | % Change |
|---|---|-----------------------|-----------|------------|-----------|
| A | % decrease in # of security breaches | 0% | 20% | 20% | 0% |
| Variables <input data-bbox="311 458 357 475" type="button" value="more..."/> | | | | | |
| B | # of security breaches (annual) | 50 | 50 | 0 | 0% |
| C | Cost per security breach | \$10,000 | \$10,000 | \$0 | 0% |
| Formulas <input data-bbox="230 631 339 649" type="button" value="more..."/> | | | | | |
| D | Total cost - security breaches (annual): $((100\%[1]-A)*B*C)$ | \$500,000 | \$400,000 | -\$100,000 | -20% |
| E | Annual savings: reduce risk of security breaches: $(D(B)-D(T))$ | | \$100,000 | | |
| | | 1 Year | 2 Year | 3 Year | 4 Year |
| | | % annual change: 75% | 100% | 100% | 100% |
| F | Annual savings: reduce risk of security breaches: $(D(B)-D(T))$ | \$75,000 | \$100,000 | \$100,000 | \$100,000 |
| | | GRAND TOTAL All Years | | | \$475,000 |

Evidence:

- “We believe that security breaches of all types cost enterprises in excess of \$70 billion per year. In other terms, finding, locating and fixing security breaches can add as much as 1% to an enterprise’s already stretched IT budget.” Ref. 1.

Reference:

- Ref. 1: *The High Cost of Overlooking Security*, interview with J. Prince, Discovery Research Group, Oct. 2, 2002.

EXHIBIT A-3.12 “Reduce Total Cost of Ownership”

FINDINGS

Lower maintenance and expansion costs of an intranet-based GKB save over \$1 million in total cost of ownership (TCO) of systems and software.

(continued)

EXHIBIT A-3.12 (Continued)

Definition:

Total cost of ownership of the GKB includes hardware, software, communications, training, and other related IT support costs that are incurred over its lifetime.

Business Importance:

Understanding and realizing a lower GKB TCO will save ABC money as well as reduce its reliance on hard-to-find, geographically dispersed technical personnel.

Solution Driver:

Inherent in the architectural design, the cost is less to maintain or expand one master GKB than multiple, dispersed product design databases, such as now exist with ABC's client-server knowledge bases.

Calculations:

| | | Base Period | Target | # Change | % Change | |
|---------------------------------|--|-----------------------|-----------|------------|-----------|-------------|
| Key Metric more... | | | | | | |
| A | % reduction in application/system TCO | 0.0% | 7.0% | 7.0% | 0% | |
| Variables more... | | | | | | |
| B | Hardware costs (annual) | \$300,000 | \$100,000 | -\$200,000 | -67% | |
| C | Software costs (annual) | \$50,000 | \$250,000 | \$200,000 | 400% | |
| D | Communications (IT) costs (annual) | \$200,000 | \$50,000 | -\$150,000 | -75% | |
| E | Application/system training costs (annual) | \$60,000 | \$30,000 | -\$30,000 | -50% | |
| F | Other IT-related costs for the application/system | \$10,000 | \$10,000 | \$0 | 0% | |
| Formulas more... | | | | | | |
| G | Total Cost of Ownership (annual): ((100%*(I)-A)*(B+C+D+E+F)) | \$620,000 | \$409,200 | -\$210,800 | -34% | |
| H | Annual savings: reduce Total Cost of Ownership (TCO): (G(B)-G(T)) | | \$210,800 | | | |
| | | % annual change: | | | | |
| | | 1 Year | 2 Year | 3 Year | 4 Year | 5 Year |
| | | 75% | 100% | 100% | 100% | 100% |
| I | Annual savings: reduce Total Cost of Ownership (TCO): (G(B)-G(T)) | \$158,100 | \$210,800 | \$210,800 | \$210,800 | \$210,800 |
| | | GRAND TOTAL All Years | | | | \$1,001,300 |

Evidence:

- “Well-managed worldwide corporate intranet-based databases have at least 20% less TCO than comparable client-server systems.” Ref. 1.

Reference:

- Ref. 1: *Why Use an Intranet-Based Platform?*, Interview with D. Johnson, ML Research, Nov. 4, 2002

Appendix A-4

Business Case Analysis Process Used

In order to accurately, yet quickly, research, develop, and communicate this business case, the team used the VALUE-on-Demand methodology outlined in the book, *Making Technology Investments Profitable: ROI Road Map from Business Case to Value Realization (Second Edition)*, by Jack M. Keen, John Wiley & Sons, Hoboken, New Jersey, 2011. This process, data flow, description of tools, and activities of the business case team are outlined in Exhibit A-4.1.

The Process

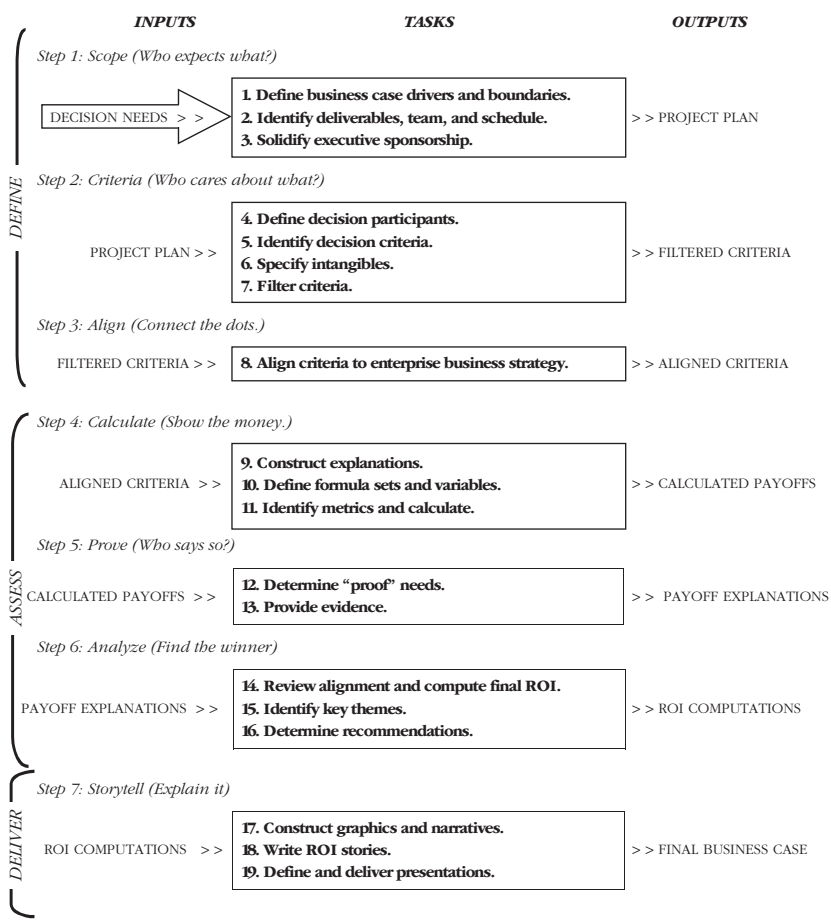


EXHIBIT A-4.1 Seven-Step Method for Building Successful Business Cases

Select a Business Case Project



(Item One) Use the ValueBoard to define payoff areas and arrange them by category.

| Solution | Cost | Benefit | NPV |
|-------------------------------|---------|---------|--------|
| 1. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 2. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 3. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 4. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 5. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 6. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 7. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 8. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 9. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 10. Increase customer loyalty | 100,000 | 150,000 | 50,000 |

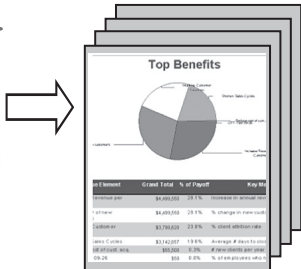
| Payoff | Cost | Benefit | NPV |
|-------------------------------|---------|---------|--------|
| 1. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 2. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 3. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 4. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 5. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 6. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 7. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 8. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 9. Increase customer loyalty | 100,000 | 150,000 | 50,000 |
| 10. Increase customer loyalty | 100,000 | 150,000 | 50,000 |

(Item Two) Each PayoffCard documents value calculations and reasoning for one Value Element.

| Costs | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Grand Total |
|--------------------------|---------|---------|---------|---------|---------|---------|-------------|
| Software License Fees | 200,000 | | | | | | 200,000 |
| Installation Costs | 600,000 | | | | | | 600,000 |
| Hardware Costs | 100,000 | | | | | | 100,000 |
| Annual Maintenance Fees | | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 300,000 |
| Other Ongoing Expenses | | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 750,000 |
| Total All Costs Per Year | 900,000 | 210,000 | 210,000 | 210,000 | 210,000 | 210,000 | 1,860,000 |

| Payoffs | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Grand Total |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-------------|
| CEO/CFO | 101,250 | 136,000 | 136,000 | 136,000 | 136,000 | 641,250 |
| SALES & MARKETING | 136,000 | 180,000 | 180,000 | 180,000 | 180,000 | 656,000 |
| PRODUCT ENGINEERING | 162,000 | 216,000 | 216,000 | 216,000 | 216,000 | 1,026,000 |
| CENTRAL RESOURCES | 180,000 | 240,000 | 240,000 | 240,000 | 240,000 | 1,140,000 |
| IS | 42,500 | 70,000 | 70,000 | 70,000 | 70,000 | 322,500 |
| Total Payoff Per Year | 1,056,000 | 1,402,000 | 1,402,000 | 1,402,000 | 1,402,000 | 6,682,000 |
| Total Net Payoff Per Year | 846,000 | 1,192,000 | 1,192,000 | 1,192,000 | 1,192,000 | 5,638,000 |
| Net Cash Flow Per Year | -900,000 | 846,000 | 1,192,000 | 1,192,000 | 1,192,000 | 4,738,000 |

(Item Three) The Tangible Worksheet recaps the costs and benefits to determine IRR, NPV, and so on.



(Item Four) Executive Reports visually show findings.

EXHIBIT A-4.2 Data Flow for VALUE-on-Demand Business Case Development

Data Flow

Exhibit A-4.2 shows how value calculation data flow from the initial identification of a payoff area—shown as a value element on the ValueBoard (Item One)—onto a PayoffCard, which recaps the definition, rationale, calculations, and evidence related to that value element. From there the Tangibles Worksheet (Item Three) is constructed, showing the IRR, NPV, ROI, and payback period. From that information, the executive and detail reports are created for the business case document.

Description of Tools

ValueBoard: A visual mapping business-to-technology road map that helps maximize the alignment between the investment and business goals of the firm.

PayoffCard: A benefit profile method of organization that helps focus on the contribution of a specific payoff area.

Value Ladder: A visual tool for exploring the cause-and-effect relationships among specific payoff areas addressed by the business case.

Tangibles Worksheet: A structured analysis and documentation of all monetary factors.

Executive Report: A summary of key findings of importance to the decision team.

Activities of the Business Case Team

- After the business case team was appointed by executive management, it had a one-day organization and brainstorming session. The purpose of the meeting was to scope (Step 1), identify criteria (Step 2), and align (Step 3).
- During this session the team identified 30 to 40 management concerns (cost and benefit issues) to help evaluate the proposed systems investment, and then placed them on the ValueBoard.
- These first-pass 30 to 40 management concerns on the ValueBoard were then culled down to the top 12 for inclusion in the final cost-benefit analysis (Item One in Exhibit A-4.2). This was done after interviewing executives, managers, and end users as well as researching secondary research sources. Appendix A-1 lists major contributors.
- Supporting data were then researched (Step 4—calculate) for the definition, business importance, solution drivers, and evidence/support

(Step 5—prove) of each of the 12 key payoff areas, and then they were documented on the PayoffCards (Item Two in Exhibit A-4.2).

- Formula sets were created for the key issues that could have quantifiable benefits.
- Data were gathered and applied to the calculations for the final end analysis of options (Step 6—analyze). The Tangibles Worksheet (Item Three in Exhibit A-4.2) and the Executive Reports (Item Four) showed the results.
- Validation of the analysis was conducted with the business case team executive sponsor as well as with people identified in Appendix A-1. After this was completed, the final GKB business case was written and presented to the decision team (Step 7—storytell).