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Abstract: This paper outlines the development of a strategic plan for Bentley, a service oriented consulting operation. The paper describes strategic alternatives facing the firm and recommends one of the alternatives.

Strategic Planning at the Bentley Company

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STRATEGIC PLANNING AT THE BENTLEY COMPANY

*The Term Paper
Submitted In Partial Fulfillment
Of The Requirements For:*

**Strategic Planning
In Engineering Management
EMGT 525/IE591**

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PREFACE

This paper outlines the development of a strategic plan for a service-oriented business, in the consulting industry. The purpose of the plan is to facilitate a means of growth for the business, to identify specific opportunities and barriers to the growth, and to present recommendations for implementation. Although historic issues have been noted, the purpose is only to set the stage for future growth and facilitate the realization of the stated goals. It is a management document designed for the internal consumption of management.

The subject of this particular paper is The Bentley Company, (herein after referred to as “Bentley”), a consulting engineering and architectural design firm with headquarters in Walnut Creek, California and a branch office in Portland. One of the team members was an employee of the firm’s Portland office and was able to provide insight into the firm’s operations. It should be noted that several of the issues identified in the analysis applied to individual offices, and not the firm as a whole. Almost all the issues are typical of most firms of this type and are not intended to “air dirty laundry”. For this reason, other specific issues that face Bentley have not been included for confidentiality reasons. For the same reason, specific financial issues were not included.

The basis for the strategic plan is Bentley’s own stated goals which seeks to increase the firm’s annual revenues to \$100 million dollars by the year 2000. Although the document was released in 1996, the base year, or “Point A” was assumed as 1995, to make the study a “Five Year Plan”. The key success factors identified in this paper are those stated by Bentley. They were incorporated into this plan in order to increase the plan’s relevance to current company goals.

This paper is organized by the following sections:

1. Background
2. Strategic Planning
3. Summary and Conclusion
4. Exhibits

A detailed breakdown of the outline can be found in the Table of Contents.

1. BACKGROUND

1.1. ABOUT THE BENTLEY COMPANY

The Bentley Company is a service provider in the engineering and design industry. Although it produces no “goods”, per se, the firm provides consulting services to clients in the form of “construction documents”, consisting of plans/drawings, specifications and other services to facilitate the construction of various facilities, buildings and structures.

The firm was founded in 1935 by Clyde Bentley as a mechanical engineering firm in San Francisco, California as Bentley Engineering Company. The firm is still a family -owned company with the third generation management now in place. The Bentley Company (Bentley) has grown to a firm with over 150 staff in three offices in the Western U.S. The Corporate offices were moved from San Francisco in 1994 to it’s current location in Walnut Creek.

Bentley has enjoyed a steady growth since it’s inception, expanding to offices in the Los Angeles and subsequently acquiring the Portland office of Galat, Mitchell and Associates in 1989. In 1994, Bentley acquired the Portland firm of Engineering Design Associates, a long-time Portland presence specializing in services to the power industry. The Los Angeles office was then moved to Costa Mesa in the mid-1990’s.

For information regarding organizational and branch chart, please see Exhibit A (A.1. and A.2).

1.2. SERVICE LINES (“PRODUCTS”)

Originally limited to mechanical engineering, the firm now offers multi-discipline design services, consisting of architecture, civil/structural engineering, electrical and mechanical engineering. These services are offered for a wide variety of projects that demonstrate the breadth of the firm’s overall capabilities. The types of projects include:

- Telecommunications systems and facilities
- Automobile manufacturing plants
- Biotechnology and pharmaceutical laboratories and plants
- Military installations
- Aerospace and aviation facilities
- Institutional (schools, hospitals, and prisons)
- Power systems (hydroelectric generation, transmission, substations)
- Risk Management
- Seismic design and retrofit

For more information on the services provided by the Bentley Company, please see Exhibit B.

1.3. CORPORATE MISSION AND VISION

The Bentley Company has developed their vision and mission out of their quest for success, anticipation of change and the need for growth.

Vision: The Bentley Company will be a premier, international management, design and construction company. The Bentley company will be the quality leader, against which all others are measured.

Mission: The Bentley Company's mission is to profitably provide value-added engineering, architecture, construction and management solutions throughout the world.

2. STRATEGIC PLANNING

Strategic planning process that aims to bring The Bentley's Corp. from point A to point B was discussed at seven distinct.

1. Strategic Objectives
 - Definition of point A
 - Definition of point B
2. Plan to Plan
3. Key Success Factors (KSF)
4. Critical Issues
5. SWOT Analysis
6. Gap Analysis
7. Strategy Formulation

Each of these phases will be reviewed as if they are separate entities to allow the reader easily understand the concepts discussed in this paper, but in fact the entire strategic planning process is continuous. The S³C team believes that each of these steps are intertwined and can not (should not) be separated during the planning and the implementation phases of the strategic planning process phases (please see Exhibit C for schematic illustration).

2.1. STRATEGIC OBJECTIVES

Strategic objective is a written statement that describes an intended outcome.

Based on this definition, the strategic objective of the S³C team is to bring the Bentley's Corporation from point A to point B. Point A and point B is defined as follows:

2.1.a. Definition of Point A (Current Status)

<i>Start Year:</i>	1995
<i>Firm Profile:</i>	Multi-discipline engineering and architectural (E/A) consulting firm
<i>Services Offered:</i>	Architectural, electrical, mechanical, civil and structural engineering
<i>Geographic Presence:</i>	West Coast - Offices in Walnut Creek, CA (Corporate) Branches in Costa Mesa, CA and Portland, OR
<i>Revenue:</i>	Approximately \$15 M annually

Organization: Business area focus, based on market sector and client breakdown as follows:

A. Commercial / Institutional - Government (C/I)

Corps of Engineers
U.S. Coast Guard
U.S. Navy*
NASA*
AT&T
U.S. West
MCI

B. Manufacturing / Industrial (M/I)

New United Motor Manufacturing Inc. (NUMMI)*
McDonnell-Douglas Aircraft*
Lockheed
Toyota
Chevron
Texaco

C. Power Services

U.S. Army Corps of Engineers
Bonneville Power Administration (BPA)*
Portland General Electric (PGE)
PacifiCorp
Numerous PUD's

E. Energy

U.S. Navy
U.S. D of E
Various Utilities

* Represents client with greater than 15% of total billings/revenue

2.1.b. Definition of Point B (Desired Status)

Start Year: 2000

Revenue: Approximately \$100 M annually

Thus, the strategic objective of the S³C team is to make a \$ 100 M Bentley Company by the year 2000.

2.2. PLAN TO PLAN

The second phase of the strategic planning process is *plan-to-plan*. The plan-to-plan phase can be considered as a road map that describes the reader how S³C team develop The Bentley's Corporation's strategic plan and outlines the sequence of the strategic planning steps taken to fulfill the strategic objectives.

The purposes of the plan-to-plan phase are:

- a. To define top management's commitment to the strategic management process.
- b. To set the planning horizon - Strategic objectives
- c. To list the people who will contribute to each step of the process.
- d. To outline the major steps, or tasks, in the strategic planning process
- e. To set the sequence and timetable of events
- f. To identify strategic planning barriers, and ways to overcome them.

Each steps listed above must be fulfilled satisfactorily in order for the strategic planning process to succeed. The S³C team believes that The Bentley Company satisfies all the requirements outlined as above.

Detailed information on the above topics can be obtained via Internet. The address is:
<http://www.perfstrat.com/articles/ptp.htm#review>

2.3. KEY SUCCESS FACTORS (KSF)

The Bentley's philosophy is to build upon their Key Success Factors. They believe that these factors are essential to achieving their vision.

They strongly emphasize that each business area set their goals and measure their results based on the identified Key Factors for success.

1. Total client satisfaction
2. Top-quality people
3. Excellent project management
4. Develop new services, businesses and markets
5. Strong business management

2.4. CRITICAL ISSUES

The S³C team believes that the Bentley Company must successfully address the critical issues in order to achieve their vision. The S3C team outlined the following issues as critical for the Bentley Company:

1. Attracting and retaining the best people in the industry
2. Developing their people into good project and business managers

3. Helping their clients achieve success
4. Establishing strong, long-term client relationships
5. Positioning their business areas into growth market
6. Managing their cash effectively
7. Welcoming and managing change
8. Continually improving company-wide processes
9. Developing new niches to better serve their clients
10. Using global network to their competitive advantage
11. Communicating and delivering their collective company resources to each of their clients

2.5. SWOT ANALYSIS

Strengths, weaknesses, opportunities and threats for The Bentley Company are listed as follows. Please refer to Exhibits D-H for more detailed information.

Strengths

- Diversified staff expertise
- Solid client base
- High client service orientation
- Strong marketing group/focus
- Strong financial focus
- Strong quality focus
- Quick response focus
- Good geographic presence
- Unique power services experience in the NW
- Excellent relationship with several government agencies
- Excellent capabilities in telecommunications industry

Weaknesses

- Personnel management weak
- Morale low
- High turnover
- Culture differences between corporate and branch offices
- Power B.A. too reliant on “large projects”, not enough relationship-building
- Competition among “rising stars” and high performers.
- Poor follow-through on P.M. training for staff
- Poor performance on past key clients
- Poor A/R collections in the past
- Limited technical capabilities in specific areas (Mechanical-process, Electrical Power-transmission, hydroelectric machinery, ...)

Opportunities

- Strong business climate
- Windfall client (Wells Fargo)
- Geographic expansion
- Capabilities expansion in specific niches (Biopharmaceuticals)
- Recent key employee hires
- Growing market for in-house multi-discipline services (“Facilities Engineering”)
- Strong P.M. training program
- New emphasis on A/R collection
- Increased capabilities in adding architectural staff
- Deregulation of the electric utility industry
- Increased seismic risk mitigation requirements

Threats

- Out of State firms moving into the area
- Losing good staff to competition
- Potential for dissatisfied clients
- Increased A/R due to poor collections, resulting in loss of revenue
- Policy changes by Corporate
- Availability of qualified employees

2.6. GAP ANALYSIS

Using the five Key Factors for Success (KFS) identified by The Bentley Company and outlined in this report, the SWOT items were compared and gaps identified to determine the relative success of the company’s goals. Ratings are based on a scale of 1 to 5, with 1 being poor and the gap between the goal and the actual rating is large, and 5 being excellent with no gap between actual and goal. The rating for each KFS is as follows:

1. Totally Satisfied Clients

It was generally found that Bentley has a mixture of overall responses when comparing strengths and weaknesses. Although the firm is actively seeking to improve it’s rating with it’s clients, there appears to be considerable residue from past relationships and projects to give rise to concern. The overall rating for this KFS is 3.

2. Attract, Retain and Motivate Top Quality People

Although Bentley has attracted several new key hires that will expand the firms offered services, there appears to be difficulty in retaining staff members. Some of the staff adjustments are the result of economic changes and other external factors, there remains a

large component of staff changes that could be avoided with a change in strategy and management philosophy. The overall rating for this KFS is 2.

3. Excellent Project Management

Bentley has implemented a comprehensive training and certification program, which will help address past problems with weak project management. Recent surveys have indicated that several key project managers have not completed this program. The overall rating for this KFS is 3.

4. Develop New Services, Businesses, and Markets

Bentley has aggressively pursued new opportunities, by acquiring key employees, other firms, and expanding into new markets. There continue to be additional opportunities that the firm has not successfully developed. Overall rating for this KFS is 4.

5. Strong Business Management

Bentley has implemented a strong financial focus on the projects and on the profitability of each office and business area. Contracts and proposals undergo a more stringent review by management, to verify that profitability goals are met. Overall rating for this KFS is 4.

The results of the gap analysis is visually shown in Exhibit I (please also see Exhibit J).

2.7. STRATEGY FORMULATION

Three strategy alternatives have been developed and are presented. Each alternative outlines the needed resources, potential risks and other changes in the management systems and present strategy. The alternatives are as follows:

Alternative 1 - Focus on increased capabilities by adding qualified staff.

The firm's strength lies in the ability to provide a broad scope of services to its clients. Adding to these capabilities by hiring key staff in the "missing areas", such as hydromechanical engineers, stormwater specialists, and process-mechanical engineers can significantly improve the overall capabilities.

Resources required: Additional staff, creating an additional overhead cost unless identified opportunities can be identified and the new staff assigned to these opportunities.

Risk: New opportunities will not be realized in a timely manner, causing a financial burden on the office.

Required changes in current operations: In order to retain the new staff, changes in management style are required, or the same turnover trend will continue.

Relevance to stated Key Factors for Success (KFS): This alternative has a high relevance to the stated KFS.

Alternative 2 - Focus on increased capabilities by acquiring another firm

Again, the firm's strength lies in the ability to provide a broad scope of services to its clients. Adding to these capabilities by acquiring another firm with the needed capabilities can have the added benefit of additional clients and a ready staff.

Resources required: Financial

Risk: New opportunities will not be realized in a timely manner, causing a financial burden on the office. Often, a company that is acquired due to a financial burden, that may also add to Bentley's own burden. Also, the merged company's culture will not always mesh with Bentley's, causing the key staff to leave and creating a missing capability again.

Required changes in current operations: Acquired company will bring its own culture and systems, which will require interface with current systems. Often the culture may conflict with Bentley's, creating conflict with the merged staff.

Relevance to stated Key Factors for Success (KFS): This alternative has a high relevance to the stated KFS

Alternative 3 - Develop Strategic Alliances

Instead of acquiring staff or other firms, this alternative seeks to develop strategic alliances with compatible firms with the needed capabilities.

Resources required: None

Risk: Little, if any.

Required changes in current operations: Little change required, since the alliance is for a specific project or client, and the allied firms will retain their autonomy.

Relevance to stated Key Factors for Success (KFS): This alternative has a very high relevance to the stated KFS

Alternative 4 - Focus on internal changes

It has been indicated that growth in the firm's overall operations and an aggressive marketing strategy is hampered by internal weaknesses. This option seeks to change the internal systems and management philosophies.

Resources required: Commitment from management to make difficult cultural changes

Risk: Changes aren't made, resulting in loss of growth momentum and lost opportunities.

Required Changes in current operations: Shift in cultural values for both staff and management.

Relevance to stated Key Factors for Success (KFS): This alternative has a moderate relevance to the stated KFS.

3. SUMMARY AND CONCLUSION

To summarize the development of the alternatives, the primary focus is to facilitate the opportunity for Bentley's economic growth and to achieve its goals. Since the focus of the business is service, and the perceptions of the client are paramount, the importance of addressing internal weaknesses cannot be underscored. However, these issues are a matter of survival, not economic growth. It is not this paper's intent to highlight issues with Bentley's organization and management philosophy, except where they impact the opportunity for strategic positioning and company expansion. With the exception of Number 4, the alternatives are geared towards the growth objective, to get from Point A to Point B.

It is this paper's recommendation that Alternative 3 be pursued. It affords the least risk, least resource cost and has a minimal impact on the existing organization. The alliance approach presents the opportunity to develop team capabilities and resources that a typical design firm does not offer. In addition to developing allied relationships with other design firms, relationships should be pursued with construction companies that can be made into a Design-Build team. The Opportunities portion of the SWOT analysis identified design-build as an approach that is gaining favor among public and private agencies. If the contractual arrangement is carefully made, there is a high degree of potential for significant earnings. This is an important consideration in achieving the financial goals of Point B.

Other alliances can include relationships with "vendors", firms who furnish and sometimes install specialty equipment for industrial users and power generators. The increasingly deregulated environment can present opportunities with these suppliers, allowing Bentley to participate in the profits associated with large equipment. This is another venue to accomplish the financial goals set forth for Point B.

In closing, Bentley is well positioned to take advantage of the opportunities identified in this paper. Its core capabilities are exceptionally suited for the type of work that can yield excellent returns. However, a service provider is only as good as the individuals within the organization who provide the service. Bentley's challenge will also be to meet the goal of KFS 2, and that is to attract, retain and motivate top quality people, for it is these people who will make Bentley successful.

EXHIBITS

EXHIBIT A.1

ORGANIZATIONAL CHART - CORPORATE OFFICES

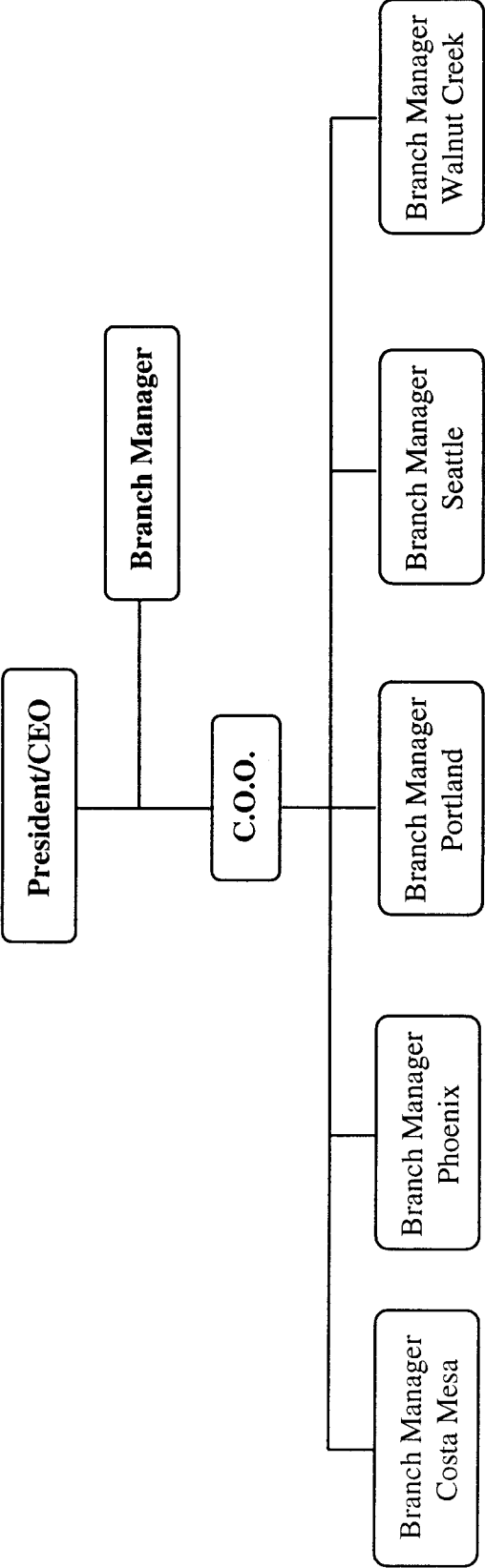
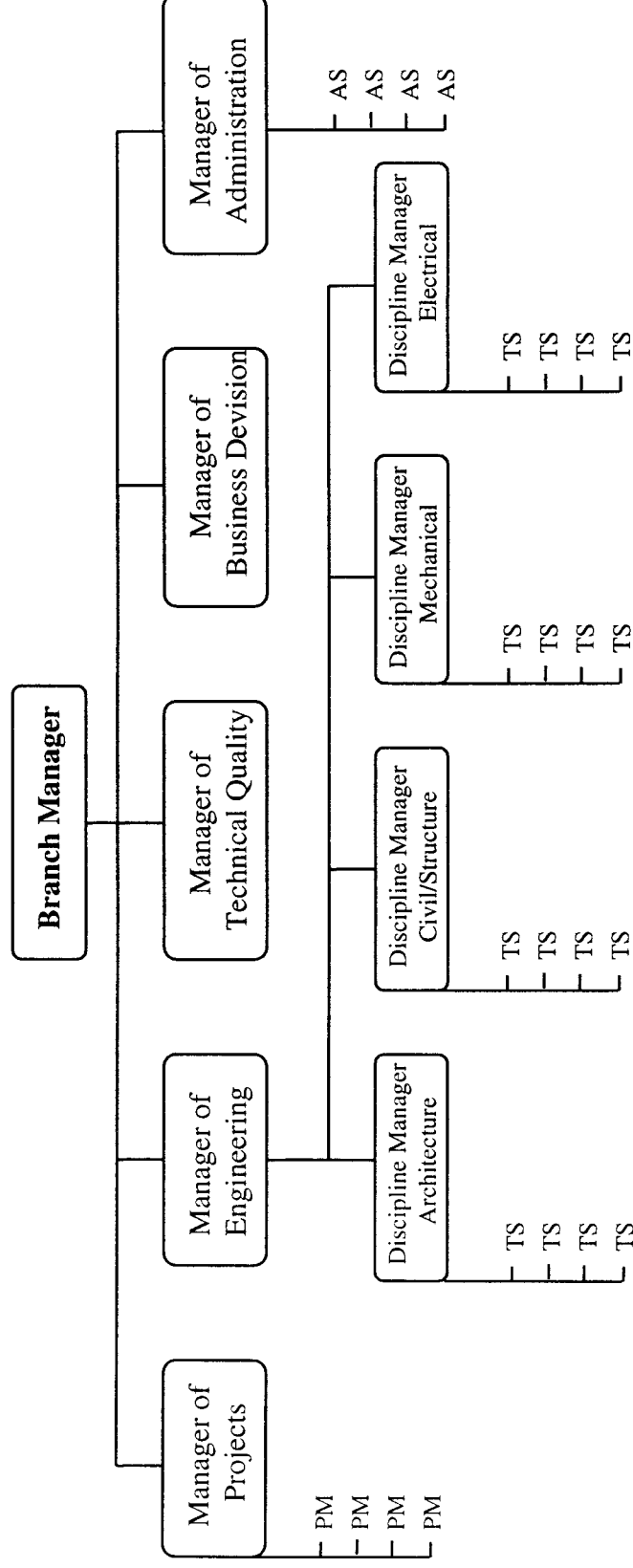


EXHIBIT A.2

ORGANIZATIONAL CHART - INDIVIDUAL BRANCH OFFICES



PM: Project Managers
 TS: Technical Staff
 AS: Administrative Staff

EXHIBIT B

SERVICE LINES OF THE BENTLEY COMPANY (“PRODUCTS”)

The Bentley Company provides full service project management, engineering, architecture, and construction services for commercial, institutional, and industrial clients throughout the world. Their services cover all project components: feasibility and planning studies, facility design, process design, permitting, licensing and construction. In this sense, the Bentley Company offers multi-disciplinary professional services in six areas:

1. Architecture

Specializing in building design, facilities support, and building renovation, their experiences range from space planning and tenant improvements to high-tech design and construction. Project experiences range from master plans and site analysis to building design and construction support.

2. Engineering

Their expertise of civil, structural, mechanical, electrical, industrial, process/chemical and instrumentation/controls engineering disciplines form the foundation of the Bentley Company services for private, industrial, commercial, institutional, and public sector industries.

3. Energy Management

They provide comprehensive energy solutions to the public sector, as well as commercial, industrial and utility clients. They provide cost effective and innovative energy engineering, design, and construction services to modernize the infrastructure of their clients' facilities.

4. Power Delivery

The Bentley Company's Power Division focuses on power quality and reduction of electrical operating costs through system alternatives and ownership options. Their primary focus is on substation, distribution, and transmission services. Their staff provides cost effective design and installation alternatives developed from extensive design and field experience.

EXHIBIT B

SERVICE LINES OF THE BENTLEY COMPANY (“PRODUCTS”) cont..

5. Risk Management

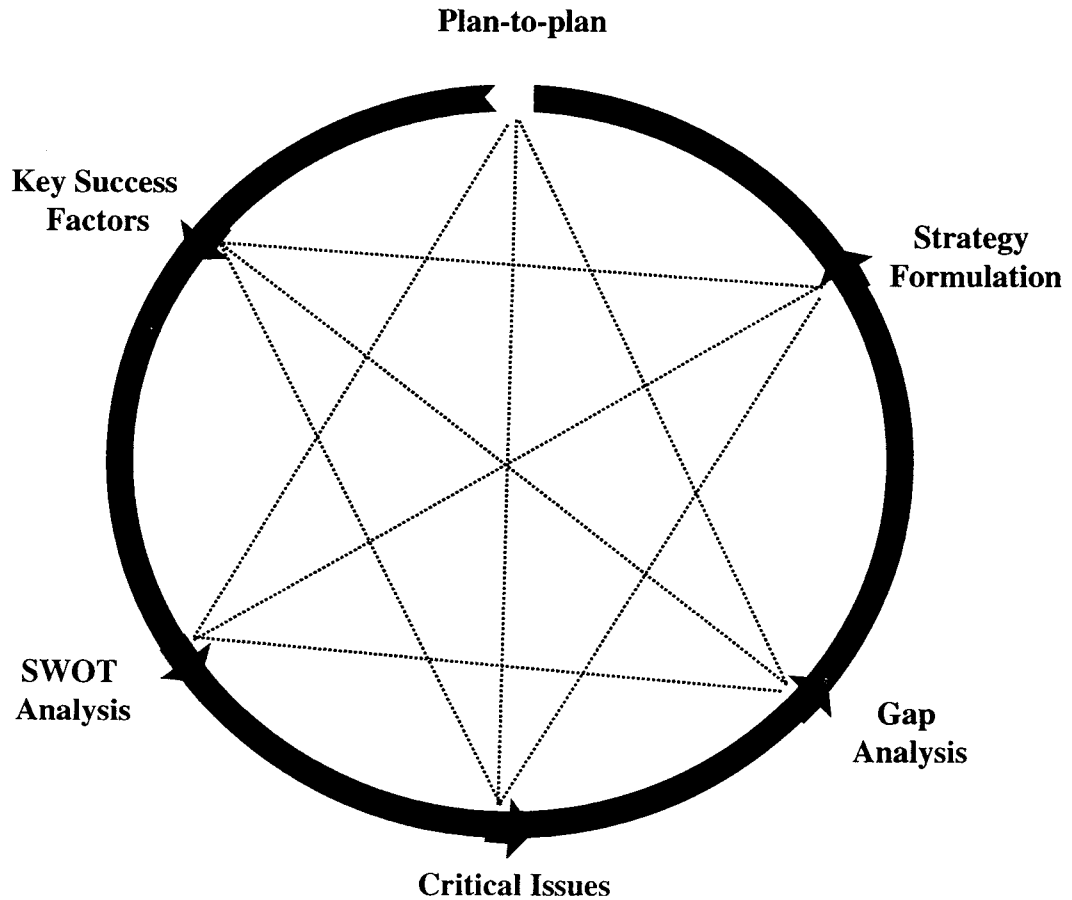
Their Risk Management Group minimizes clients' risk of personal injury, process down time, and /or loss of life. Specialized services include Fire Detection and Suppression Systems, Life Safety Systems, Fire Hazard Analysis, Code Consulting, Occupational Safety, and Pre-Emergency Planning.

6. Information Technology

Their Information Technology resources support the entire continuum of planning analysis, management, implementation and support of technology-based solutions to solve business needs. They apply Computer-Aided Design (CAD) and facility modeling, Computer-Aided Facilities Management (CAFM), Automated Mapping/Facilities Management (AM/FM), and Geographic Information Systems (GIS).

EXHIBIT C

CIRCLE OF STRATEGIC PLANNING



Strategic planning process that was being implemented by S³C team to bring the Bentley Company from point A to point B is schematically demonstrated.

S³C team believes that the strategic planning process must be interactive as illustrated with dashed lines (all six elements of the strategic planning process must be interactive throughout the planning and the implementation phases). It must also be realized that strategic planning is not a static process. It is rather dynamic and requires continuous improvement.

EXHIBIT D

SWOT ANALYSIS - STRENGTHS

The following analysis has been related to Bentley's five "Key Factors for Success". The individual KFS is identified by it's number in parenthesis (e.g. KFS 1), as outlined in the report. As is generally the case, several strengths also corresponded to weaknesses. These are explained in the applicable cases.

1. ***Diversified staff expertise*** - The firm in general has a broad spectrum of capabilities, evidenced by the number of specific disciplines such as mechanical, electrical, etc. engineers, as well as specialists in biopharmaceuticals, microelectronics, hydropower, risk management, etc. (KFS 2)
2. ***Solid client base*** - Several of Bentley's clients have done business with the firm for over 10 years. The firm enjoys a fairly high rate of repeat business. (KFS 1)
3. ***High client service orientation*** - Bentley has recently focused on quality in successfully completing it's assignments for all it's clients. (KFS 1)
4. ***Strong marketing group/focus*** - Each Bentley office has a marketing manager or coordinator, whose responsibility is coordinating the marketing efforts. In addition, each project manager has marketing goals within his or her particular business sector. Frequent and regular coordination meetings, via conference call and Email, are held with the other offices. (KFS 4)
5. ***Strong financial focus*** - Due in part to past problems, it appears that the firm has placed a high priority on improving it's financial condition. This includes debt collection, stronger contract language to avoid providing services that were not estimated, and more responsible project management. (KFS 5)
6. ***Strong quality focus*** - In order to differentiate from competition, Bentley has implemented a strong quality assurance program to improve the projects' quality, delivery and budget success. (KFS 1 & 3)
7. ***Quick response focus*** - Bentley has placed a high priority on the ability to respond quickly to it's clients' technical and schedule needs. (KFS 1)
8. ***Good geographic presence*** - The firm has offices in three western U.S. cities: Walnut Creek, CA, Costa Mesa, CA and Portland, OR., that allows the firm to enter almost any area on the west coast. (KFS 4)

EXHIBIT D

SWOT ANALYSIS – STRENGTHS cont..

9. ***Unique power services experience in the NW*** - With several key individuals in the Portland office and the acquisition of a specialty firm in Portland in 1995, Bentley has a unique niche in the electric utility market, with several ongoing client relationships. (KFS 4)
10. ***Excellent relationship with several government agencies*** - In conjunction with no. 9 above, Bentley has enjoyed a long and productive relationship with several large regional utilities and federal agencies, allowing it to be strategically positioned for benefiting from the pending federal electric utility deregulation. (KFS 1)
11. ***Excellent capabilities in telecommunications industry*** - Bentley also has excellent relationships with most of the telecommunications providers in the Western U.S., particularly in the electronics and electrical disciplines. These relationships can be used to broaden the type and scope of services the firm offers these providers (KFS 1)
12. ***Strong entrepreneurial corporate culture*** - Management support for individual effort is high. Rising stars are encouraged to express their initiative in pursuing new clients, niches and projects. (KFS 2)

EXHIBIT E

SWOT ANALYSIS - WEAKNESSES

1. ***Personnel management weak*** - There appears to be some conflict between managers and staff, and not all corporate goals are communicated effectively to all the staff. In the past, performance evaluations and salary reviews have not been consistent. (KSF 2 and 5)
2. ***Morale low*** - The management “style” appears to be autocratic or authoritarian in some of the business areas, resulting in lack of staff empowerment. Management decisions are often made capriciously, with little apparent forethought to consequences. (KSF 2 and 5)
3. ***High turnover*** - In the 2 year period, between Point A and the time of this analysis, it was found that 25 of the 51 people listed on a 1995 Portland telephone extension list have left the company. This is almost a 50% turnover, averaged out at 25% per year. (KSF 2 and 5)
4. ***Culture differences between corporate and branch offices*** - There appears to be a culture gap between the Corporate staff and the Branch offices, causing misperceptions of each others roles and capabilities. This often results in misunderstandings, conflict, and certain unwillingness to cooperate and loss of esprit de corps. (KFS 3 and 5)
5. ***Power B.A. too reliant on “large projects”*** - Portland’s power business area depends and markets large projects, which are infrequent. This causes periods of extreme high and low staff utilization, resulting in staff burnout or insecurity. (KFS 4)
6. ***Competition among “rising stars” and high performers*** - (See also Strength No. 12) The competition for resources to accommodate new projects and clients can place a strain on existing staff. The problem of “politics” becomes counterproductive to the overall corporate success. (KFS 5)
7. ***Poor follow-through on P.M. training for staff*** - Although Bentley has implemented a comprehensive project management-training program, it was found that there was a high “dropout” rate in some offices. The firm states that project managers are required to be certified in this program, yet many of the identified project managers did not complete this course and certification. (KFS 3 and 5)

EXHIBIT E

SWOT ANALYSIS – WEAKNESSES cont..

8. ***Poor performance on past key clients*** - Although the firm has implemented several programs to remedy the problem, past incidents of poor performance with specific clients will hamper future marketing efforts and additional resources must be devoted to damage control in these clients' industries. (KFS 1 and 3)
9. ***Poor A/R collections in the past*** - Due to weak project management, clients were not held accountable for invoices for rendered services and invoices often aged over 90 days. Accounting practice of no follow-up invoices or statements sometimes allowed an invoiced client to "forget" about the invoice until a reminder phone call was made. (KFS 5)
10. ***Limited technical capabilities in specific areas*** - Although Bentley has key strengths in specific areas and niches, lack of associated disciplines has hindered further expansion into these markets. (Mechanical-process, Electrical Power-transmission, hydroelectric machinery are examples of disciplines that are not present but could add value to the services offered to specific clients.) (KFS 2 and 4)

EXHIBIT F

SWOT ANALYSIS - OPPORTUNITIES

1. ***Strong business climate*** - Oregon is enjoying a resurgent economic business climate, with the expansion of the high technology businesses, and expanding population base. (KFS 4)
2. ***Windfall client*** - Bentley was successful in securing a strong relationship with Wells Fargo Bank, which proved beneficial in WFB's acquisition of First Interstate Bank. One project utilized the resources of every Bentley office, and laid the foundation for expansion into new geographic areas and other similar clients. (KFS 4)
3. ***Geographic expansion*** - A healthy economy in the Western U.S., along with the firm's unique capabilities and core competencies can provide a means of expanding into other cities. Good relationships with national clients at current Bentley locations can be exploited to expand into other locations. (KFS 4)
4. ***Capabilities expansion in specific niches*** - Although the firm is multi-disciplined, many of the current relationships only involve one or two of these disciplines. For example, the telecommunications industry is served effectively with the electrical disciplines. The other disciplines, such as civil/structural and architectural services can also be offered with minimal additional resource requirements. (KFS 4)
5. ***Recent key employee hires*** - In selected offices, key technical people have joined the firm, allowing the opportunity for new business areas, clients and niches. (e.g. Biopharmaceuticals, food processing, power quality.) (KFS 2)
6. ***Growing market for in-house multi-discipline services*** - Many clients are favoring firms which offer all services in-house, providing "one stop shopping"-type of service. Bentley's multi-discipline capabilities are well suited for this type of service. (e.g. "Facilities Engineering") (KFS 4)
7. ***New emphasis on A/R collection*** - A renewed focus on collecting for services rendered will underscore the firm's project management capability and overall business acumen to augment the technical capabilities. This will also provide more reliable resources for business expansion. (KFS 5)

EXHIBIT F

SWOT ANALYSIS – OPPORTUNITIES cont..

8. *Increased capabilities in adding architectural staff* - In the Portland office, Bentley has had to rely on outside firms and consultants to furnish this capability. Since this discipline is often perceived by a client as the prime or principal discipline for design or construction projects, having this capability in house will strengthen the overall position with current and potential clients. (KFS 2 and 4)

9. *Deregulation of the electric utility industry* - Bentley is well positioned to enter this new market. It's current relationships with several large regional utilities and agencies can strengthen it's marketing position with these entities as they seek to find their place in the deregulated environment. (KFS 4)

10. *Increased seismic risk mitigation requirements* - Oregon has recently revised the building codes requirements for more stringent earthquake design. Bentley's California earthquake design experience can be effectively marketed in this environment.

11. *Design-Build* - Many public and private clients and agencies are exploring the potential of utilizing a design-build approach to their projects. (This type of approach involves a single entity that provides a completed project for a client, rather than a more traditional approach in which the A/E firm provides a design for bidding by several construction firms. The traditional approach involves separate contracts with the designer and the contractor. The design-build approach involves a close relationship between a design and a construction firm, working jointly for a client.)

EXHIBIT G

SWOT ANALYSIS - THREATS

1. ***Out of State firms moving into the area*** - As is typical with any favorable economic environment, there is great attraction for other firms to enter the market and competing for the opportunities in the area.
2. ***Losing good staff to competition*** - Specific weaknesses identified above may result in staff leaving, either due to dissatisfaction with Bentley of the attractiveness of another firm.
3. ***Availability of qualified employees*** - A strong economic market often results in a shortage of technical resources. Taking advantage of the economic boom requires additional manpower, which may be difficult to obtain.
4. ***Potential for dissatisfied clients*** - The increased business opportunities can often tax an organization's resources, particularly if the resources are difficult to expand. This can result in the inability to effectively complete an assignment, causing a client to be dissatisfied with the result.
5. ***Economic downturn*** - The potential for an economic downturn is always present, and can cause the opportunities to go away.
6. ***Increased A/R due to poor collections*** - If current programs are not successful, the firm's accounts receivable may increase, causing a cash flow problem and loss of revenue.
7. ***Policy changes by Corporate*** - Primarily a threat to branch offices, it is a possibility that corporate may decide to implement changes in the organization that seriously impacts the branch. While the change may be necessary and beneficial for the company as a whole, the effect on the branch may require extensive re-evaluation of strategy.

EXHIBIT H

SWOT ANALYSIS – CORE COMPETENCIES

A. Facilities Engineering

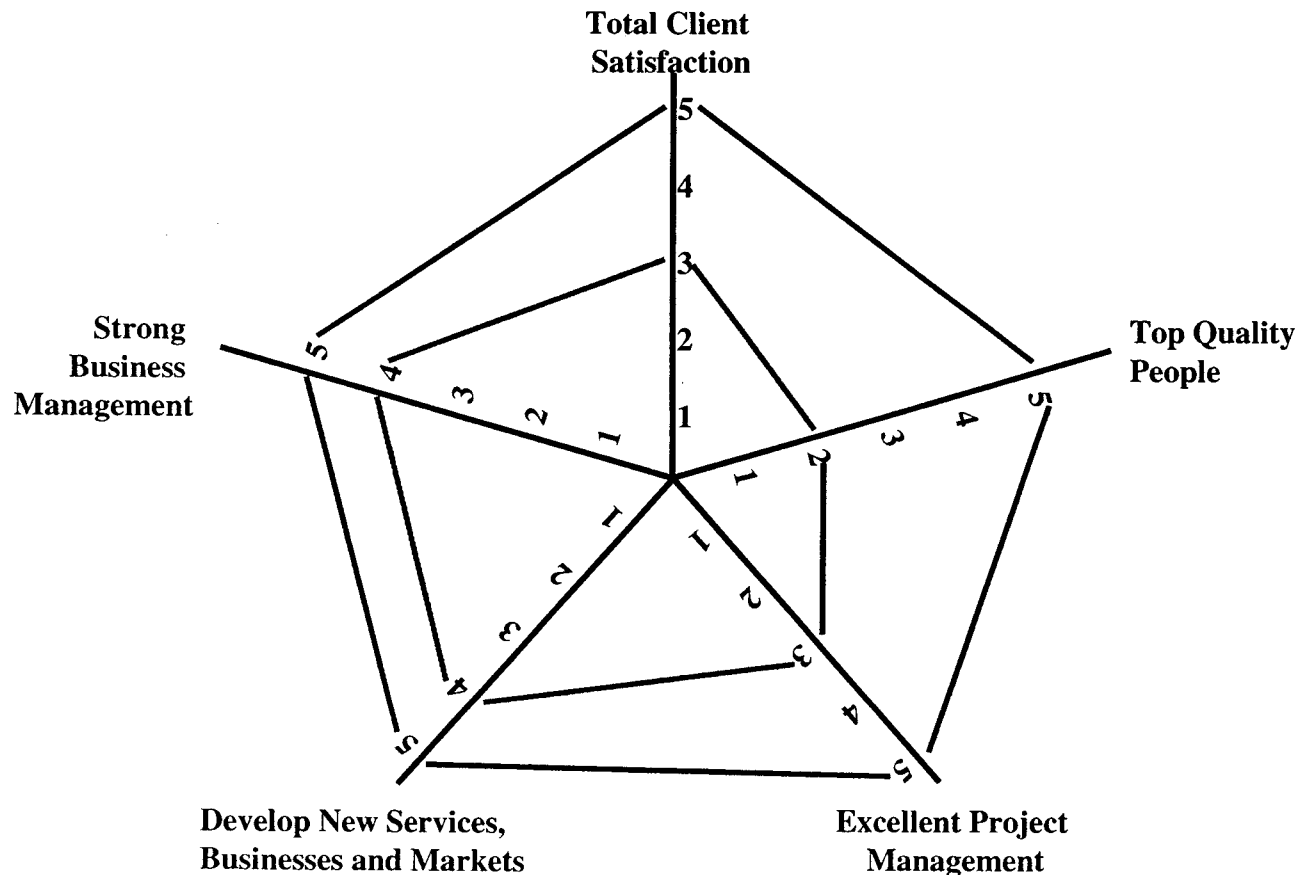
Ability to integrate various design and construction disciplines into a team that advises the varied needs of a facility, whether it is a manufacturing plant or an R&D facility. In addition to the traditional engineering and architectural disciplines, this includes Risk Management, Corrosion Engineering, Fire Protection, Manufacturing Processes, etc.

B. Power Service Engineering

Technical Expertise in the various needs of power engineering, including hydroelectric facilities, controls and automation, substation design and transmission lines.

EXHIBIT I

GAP ANALYSIS - *Based on KSF*



Blue and red lines in the above figure represents:

- Current Status (Point A, 1995)
- Desired Status (Point B, 2000)

Each KSF is ranked where 5 is excellent and 1 is poor. Higher rank for desired status represents gaps, weaknesses, while higher rank for current status represents strengths. For example, total client satisfaction desired state was 5, excellent, but the actual status was a level of 3, average, resulting in a gap (at a level of 2).

As this figure shows, the Bentley Company has significant gaps between their current status and the desired state. *Please see Strategy Formulation (Section 2.7) for information regarding suggested strategies for the Bentley Company to better and more effectively close these gaps.*

EXHIBIT J

GAP ANALYSIS - REGIONAL CAPABILITIES AND COMPETENCIES

In the following table, please find the strength capability ranking (where 1 represents low while 5 represents high) of each branch offices calculated based on number of total staff and the experience of key staff members dedicated at each branch.

<i>Branch Office</i>	BUSINESS AREAS			
	<i>Commercial/ Institutional</i>	<i>Manufacturing /Industrial</i>	<i>Power Services</i>	<i>Energy</i>
Costa Mesa	3	4	1	1
Phoenix	3	3	1	1
Portland	5	4	5	2
Seattle	5	4	1	1
Walnut Creek	5	5	2	3