Cisco Systems Architecture: ERP and Web Enabled IT

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Cisco's History and growth

History

   Cisco was founded in California in 1984 by Leonard Bosack and Sandra Lerner. They were a married couple, who both worked as computer scientists at Stanford University. The two scientists worked in different departments across campus, when Bosack created a way to connect these two local area networks. They attempted to sell the internetworking technology to any company that would listen, but they were unsuccessful. Because they could not get any takers, they came to the conclusion that their best opportunity would be to use this internetworking technology to start their own business: Cisco Systems. The name was derived from a shortened version of San Francisco.

   Cisco's principal product from their inception was the internetworking router. It was a device that used software that, by design, chose the most appropriate path for data to stream between networks. Their routers basically set the stage for multiple data transmission standards, which made linking different networks together possible, such as networks that used different architecture or hardware. (i.e. IBM-compatible PCs, Apple Macintosh computers, UNIX workstations.)

   Cisco shipped its first product in 1986 and at the time was considered the first company to commercially offer a multi-protocol router. This first router was developed for the TCP/IP (Transmission Control Protocol/Internet Protocol) protocol suite. In 1987, Cisco sold $250,000 worth of routers per month and sales figures for the fiscal year ending July 1987 were $1.5 million.

   Despite its impressive growth rate at the outset, Cisco still needed venture capital to take it to the next level. Enter Don Valentine, partner of Sequoia Capital and eventual vice chairman of the board at Cisco. Valentine made an initial investment of $2.5 million and protected this investment by demanding that the owners relinquish a controlling interest in the company with (more importantly) the ability to recruit and hire professional management. With this authority, Valentine hired John Morgridge as CEO, who in turn began to assemble an experienced executive management team that would lead Cisco into the 1990's where the company would grow at an alarming rate.

Growth

In the 1990s, companies began to install local area networks (LANs) at a very high rate. This provided a tremendous growth opportunity to Cisco, who could help these companies link the various networks that they were installing. Cisco's sales jumped from $183.2 million in fiscal 1991 to $339.6 million in 1992, and net income grew from $43.2 million to $84.4 million. (10K) Cisco began marketing to not only scientific departments with already established internal networks, but also to small, medium-sized and huge multinational companies interested in connecting their various geographically dispersed business unit computer systems with each other.

Under the guidance of John Chambers, who was named CEO in 1995, Cisco adopted a strategy of systematic acquisitions and strategic alliances that led to a level of almost unprecedented growth. In total, as of April 2008, Cisco Systems had acquired 127 companies, constituting close to 50% of the company. The largest acquisition as of April 2008 was Scientific-Atlanta, for $6.9 billion. But arguably the most important was the acquisition of StrataCom, Inc., a $4.67 billion acquisition completed in April 1996. StrataCom was a leading supplier of products capable of handling voice, data, and video. The addition of StrataCom, Inc.'s products to the Cisco portfolio was significant because telecommunications companies were adopting this technology in order to increase the capacity of their networks. The deal was also important for Cisco to diversify beyond its core customer area of 'enterprise' customers-- i.e., large corporations and institutions of higher learning--into the area of telecommunications, where it had to compete with the likes of Lucent Technologies Inc., and Nortel Networks Corporation.

In July 1998 the company's market capitalization was over $100 billion and revenues reached $12.15 billion by fiscal 1999, six times the $1.98 billion result of fiscal 1995. Cisco's market value surpassed $450 billion by 2000, making it the third most valuable company in the world, behind Microsoft and General Electric Company. By the second quarter of the 2000 fiscal year, earnings had reached $906 million.

Cisco's Strategy & Business Process

Cisco' strategy is guided by the market transitions that affect its customers. It has constantly set its business based on technology evolution as below.

1990- 1997   - End to End networks and IP based networks

1997- 2000   - All in one (voice/video)

2000 -2006   - Networks of networks

2006 - 2008   - Network as platform

2008- Current - Collaboration/ web 2.0 and borderless networks

The company expanded its products from switching & routers to data center storage and provide services by streamlining operations. Cisco could not keep up with the changing markets solely through internal development. Using acquisition and alliances to gain access to world-class technologies and people became a defining component of Cisco's strategy.

Mission & Vision

Vision: Cisco's vision is to "**change the way world works, lives, plays and learns**."

Mission:
The mission is **"to shape the future of the Internet by creating unprecedented value and opportunity for its customers, employees, investors and ecosystem partners."**

Goal:
Cisco wants to

- Become the leading architect and provider for new Internet-based infrastructure
- Change the way companies and industries operate

To help keep the company aligned in 3-5 year goals, they choose to focus on one year initiatives. Because staying focused on these initiatives as a team is so important to company success, Cisco's corporate goals and initiatives are part of each employee's badge.

Culture:

Cisco's core competencies are to provide cutting edge, custom technology. Moreover, Cisco products are certified hacker's free product and technological editor's choice. These have been consistent attributes in Cisco since the company was founded in 1984. To help achieve this, Cisco has created a corporate culture of innovation and team work. They call it 'Cisco nationalism with different races'. Furthermore, the Internet revolution is about knowledge and how that knowledge is applied. It's about economies of skill and empowerment. At Cisco, empowerment is part of the culture, and Cisco believes in empowering down to all levels of the organization.

Cisco's culture is based on the following:

- Sustainability
- No technology religion
- Stretch Goals/ Continuous Improvement
- Teamwork
- Fun
- Trust/Integrity/Giving Back
- Drive change

Business Strategy

Cisco's business strategy is to provide network and communication solutions. The strategic objectives are:

- Lead Cisco's entry into key markets.
- Invest in strategic technology and partners.

- Partner with business units – a strategic advisor
- Talent Management.

The business plan of Cisco is mainly focused on 4 elements.

1. Assemble a broad product line so Cisco can serve as one-stop shopping for business networks.

2. Systematize acquisition standards for networking.

3. Set industry wide software standards for networking.

4. Pick the right strategic partners.

Corporate Strategy

Cisco's ultimate focus is "Dedication to customer success". Cisco reorganized its engineering and marketing into 3 business areas (Enterprise, Small/Medium business, and service provider) each made up of subsidiary business units. Each line of business assisted Cisco with adjusting their business to best serve each of its major customer segments. This was of course in line with two of the core values underlying Cisco's success: a strong belief in having no technology religion, and paying close attention to customer demands.

At the same time, Cisco decided to maintain some of its centralized functional areas, including manufacturing, customer support, finance and sales. The company also continued to rely on external partnerships for many if its business undertakings. Its manufacturing strategy was based on outsourcing most of its activities such as circuit board stuffing and testing, to contract manufacturing. Additionally, it continued to depend on businesses such as Telcordia and KPMG consulting for the delivery of networking services and solutions requiring wide-ranging consulting, development and integration services.

Cisco began to increase its reliance on information technology to systematize many organizational tasks and govern them online. These included employee services, e-commerce, service and support, supply chain management, finance, e-learning and many others. Once administered online they became uniform and exceptionally scalable.

Product innovation

Cisco is a company that focuses on product innovation in addition to focusing on customer relationships. Cisco's tactics involve finding end-to-end, single-vendor networking solutions, which is one of the reasons it offers a wide range of internet hardware products and the Internet Operating System (IOS) that in turn allows network services on networking applications. Cisco's definitive goal is to create sustainability in its leadership role with important technologies and remain in the upper echelon of the market in which it conducts its business. Our next part discusses Cisco's operation and customer relationship.

Operations

Cisco started out as a visionary for IP based network equipment. It had a competitive advantage over other organizations because of its proprietary standards. This standard called IGRP (Internet Gateway Routing Protocol) was an alternative to the Routing Information Protocol and offered additional benefits like multipath routing.
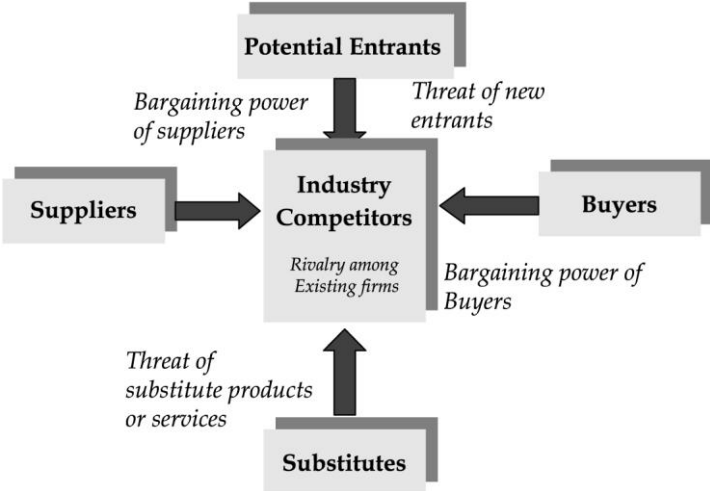
Customer Relations and Support

Cisco is first and foremost a product-oriented company. However it places a huge emphasis on customer relationship in order to reach different markets. Its organizational structure is designed based on customer relationship management. Although Cisco is aware of the importance of their customers, it does not handle all of the requisite duties involving marketing, distribution and support functions internally. In the mid-1990s, Cisco decided to grow its market to incorporate small and medium sized businesses. It went from relying mainly on direct sales to developing two-tier channel resellers.

Industry Structure

Michael Porter postulates that there are five forces those typical shape industry structures, which are intensity of rivalry among current competitors in the industry, threat of new entrants, threat of substitutes, power of suppliers, and power of customers

Porter's Five Forces

Competitive Forces	Analysis

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The Rivalry among Existing Firms	Juniper is one and only rival in core internet routing for Cisco with 30% of market share. HP in Ethernet switching. Avaya in unified communications. The main fierce rival of Cisco is Nortel connectivity penetrating aggressively to south east Asia market, however Nortel is focusing more to VOIP (Voice over internet protocol) and providing the switching base phone to companies, but since Cisco is also providing customize VOIP technology, it could become a potential rival for Cisco. Huawei Technology a Chinese bases company aggressively pursuing the market in Asia and Europe region, marketing Routers and switches half the price of Cisco, making Huawei an ultimate rival for Cisco.
Threat of New Entrants	The Router industry is considered a capital-intensive business, which requires a large sum of money to operate efficiently and effectively. Thus, it implies that the barrier to entry in this industry is high. However, since Cisco has successfully created proprietary standards in the market. In order for the new entrants to flourish they will have to copy Cisco's formula and enter the industry.

Bargaining Power of Buyers	As the number of companies grows, the market becomes saturated and Cisco has to face buyer bargaining power. With low end products like Lan and Wan, small home switches, customers tend to be price sensitive and certainly want to look for the cheapest price available in the market. The underlying reason might be that customers generally are not well technologically versed. This is particularly the case with Asians, where bargaining power of buyers are high. They typically will go for price first, not the quality. At the moment, the customers are less likely to switch to other brands because Cisco is still the market leader and innovator of WLAN, MAN, LAN, AP, Routers, Switches, Hubs, Uplinks, and Bridges. However, linked to others competitive forces, rivalry and threat of new entrants, the buyers will potentially switch to alternatives. Cisco has strongly differentiated their products and services.
Threat of Substitute Product or Service	Until now it is highly unlikely that Cisco can be substituted with another product because of its brand and market position. However substituting services can be questionable. Companies like Huawei and Nortel connectivity are pressing hard for a total customer solution strategic model. Cisco has to pursue, provide, design and develop a strategic model based on customer needs. Additionally they should provide the individualized customer solutions that will give Cisco a leading position similar to what they already hold over other companies with customer services as well as a mix of best products with total customer solutions.

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Bargaining Power of Suppliers	Cisco does in-house supply activity, however it also has suppliers like Intel for special product IC (Integrated circuits). It therefore has to maintain good relationships with Intel to continue to buy their components. Because there are only two companies that make computer and networking components (AMD) and (Intel), the bargaining power of suppliers are great.
	Since Cisco does most of its supply chain activity in-house, the company has to maintain a strong corporate culture and foster loyalty from employees. Retention of employees becomes a major focus of their strategy, hence Cisco has to offer share options and compensatory packages to employees. Thus, Cisco's reliance on others will be less, which also gives an edge to other companies.

Competitive Advantage

Cisco provides the systems that make the Internet work. Cisco is continuing to help customers compete in the explosive Internet economy by implanting Internet business models and building new world communication infrastructures that can change into a competitive advantage. As a result, their growth has been faster than its competitors.

Cisco's aptitude in controlling the power of the Internet and using change as a competitive advantage is resulting in exceptional value and returns for its shareholders. Cisco has created sustainable differentiation through platform leadership.
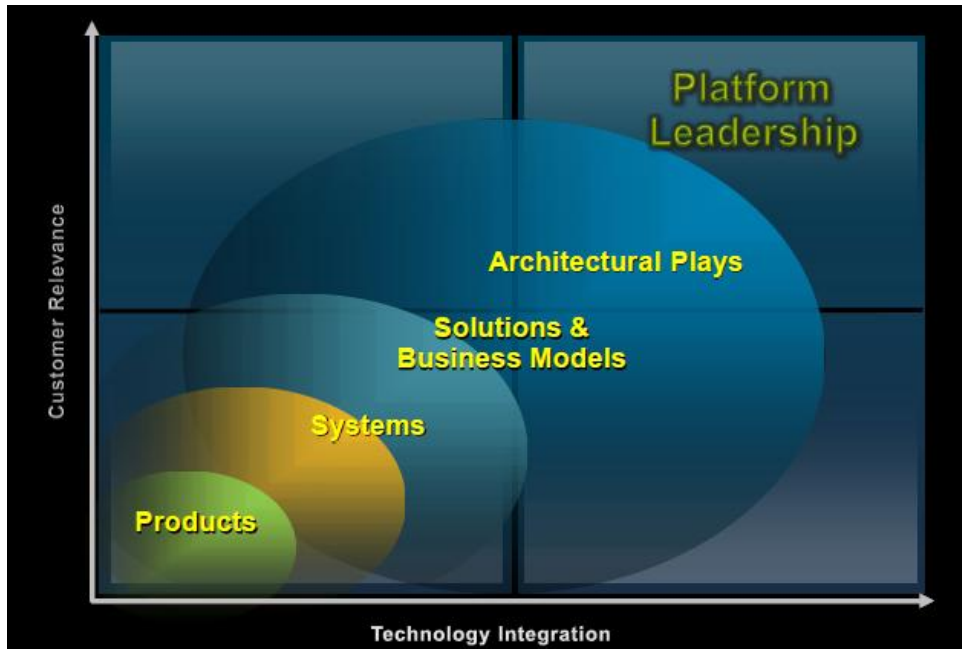
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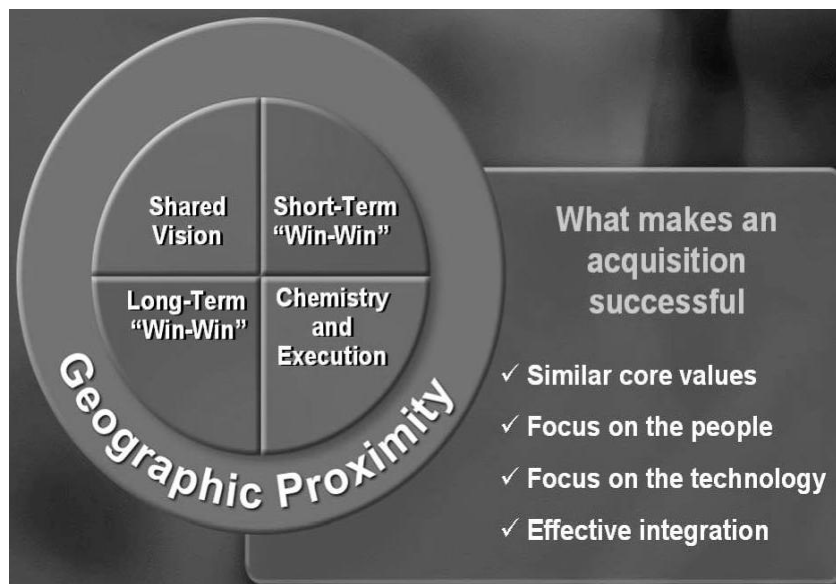
Source: Scheinman, D (2004), 'Corporate Development at Cisco' Senior Vice President, Dan Scheinman Viewed at 14/07/06

http://eco.cisco1.com/login/insight/Corporate_development_at_cisco.

SWOT Analysis

Location of Factor	TYPE OF FACTOR	
	Favorable	Unfavorable
Internal	**Strengths** • Innovation • Robust financial performance • Diverse customer base and product offerings • Market position • Extensive geographic reach	**Weaknesses** • Unsustainable High gross margin • Weak presence in contact center technologies and declining storage networking market share • Relatively weak presence in China
External	**Opportunities** • Acquisitions • Strategic alliances • Growing demand for unified communication solutions • Growing enterprise security market	**Threats** • Intense competition • Consolidation in the US telecommunication industry • Dependence on suppliers • Uncertain Global Economy • No constant innovation currently

IT operating model

Cisco views IT as an important part of a business strategy which allows the company to adapt quickly to changing business environments, as well as new business opportunities and markets. Cisco IT recently adopted a new operating model to enable a closer partnership between IT and the business, and to enable more flexible IT architecture and processes. IT works with leaders across Cisco to plan and fund new IT projects. IT delivers business capabilities to support new and changing business demands while building a more agile and reliable architecture.
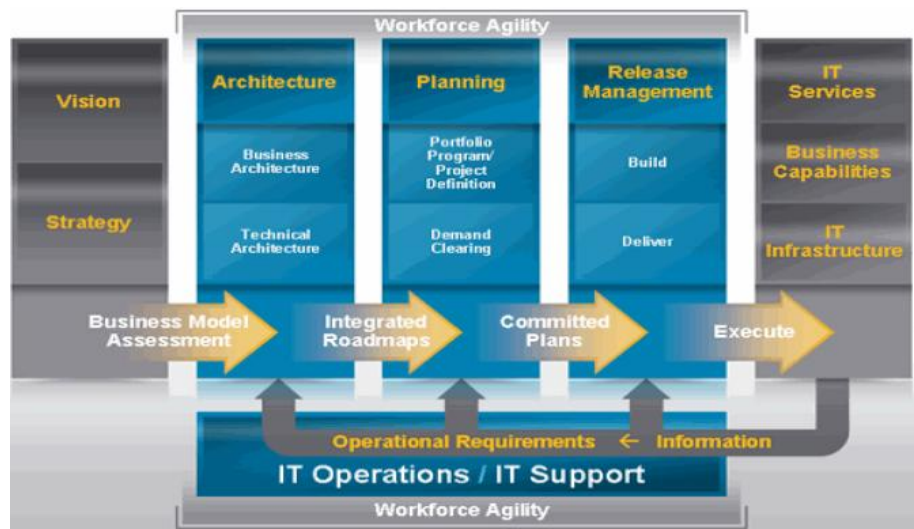
Case study & Analysis

Current Applications

Cisco was operating on a poorly implemented original software platform that developed without any architectural direction. The technical support systems were the backbone of Cisco's ability to log, track and manage customer service requests. Customers could request assistance from Cisco.com by email to the technical support team or by calling in to the call center. The three primary application packages that assisted with delivery operations were:

1.   CARE system – based on Clarify application foundation technology and used for tracking service requests

2.   Metrix system – served as the foundation for all service logistics, including spare parts inventory management, accounting, returns/repair management and order management.

3.   Product configuration tool based upon end-of-support (EOS) Calico foundation technology – used to acquire and align hardware replacements.

These three legacy systems had been in use for the better part of a decade, and consequently had gone through a great deal of customization by engineers and were at the EOS stage. The packages could no longer be upgraded and were posing a substantial risk to the company. Cisco relied on Unix-Based software package to support its operations: Financial, Manufacturing & Order Entry, the system lacked reliability and the ability to expand. The first approach used was that each functional area would determine when and how it would be upgraded. This approach did not help, little progress was made, up to the point that the systems had put Cisco out of operation for over two days. This was the point where Cisco realized that a simply "Band-Aiding" the system was not going to work. The extent of this risk was realized in January of 1994, when Cisco's legacy systems failed and practically shut down the company for 48 hours.

Connectivity & Mobility

Cisco wanted to implement an enterprise system to replace all of the different systems that they currently had in place. The 2 day shutdown, of course, highlighted the need for Cisco to modernize their IT infrastructure. One of the first things that needed to be considered from a technological stand point was connectivity. The connection technologies chosen needed to be flexible enough to accommodate all of Cisco's current connectivity needs as well as be extensible so that they could incorporate future system additions. This meant that whatever solution Cisco would decide to go with would need to be standardized across the entire company.

Cisco considered two approaches. The first option was to have each line of business undergo its own separate project to update its particular IT system. The strength of this approach

is that each line of business knows best what they're particular needs are and how to procure or develop a system that best fits they're needs. However there are many challenges to this approach. Cisco as a whole would need to have an overarching connectivity strategy in place and each line of business would need to consider it when developing or purchasing their system. Additionally the development and maintenance of middleware to bridge any connectivity gaps would almost be a certainty.

Alternatively they could choose an overall system architecture strategy capable of accommodating the different lines of business. In Cisco's case, an SOA approach would work well given the fact that they had accepted and were ready to scrap the old software and bring in something completely new. It would also ease the transition of implementing web services. For this, the architecture would include a 4-tier structure that would include a web server.

The other approach for connectivity was to implement an ERP system. Cisco's implementation would be based on open standards including TCI/IP. The ERP system has the advantage of having inter-connectivity standards baked in. Not only would they already be included, but all the business line components would already have been engineered to use in an efficient manner. This approach improves the process of making each replacement system work together. It could provide a unified view of all the organization's information and potentially be capable of letting Cisco take advantage of business intelligence systems because of the optimization of the system. The down side to this type of approach, especially given the period of time in which Cisco was looking to implement an ERP, is that modifying or extending the ERP for future functional growth could be problematic.

Ultimately successful inter-connectivity would be based on relatively low maintenance cost associated with the connectivity solution, the ability for each line of business to access data captured by another line of business, the ability to incorporate new lines of business or functionality, and the ability to scale. Risks primarily center on the ability to scale and incorporate future functionality. The risk of future proofing can be partially mitigated by using open standards that help ensure current systems can accommodate integration of new systems as well as be able to interface with partner systems. Both of which are most likely to also be based on open standards. The risk of lack of scalability can be mitigated by doing capacity simulations prior to full implementation.

Business Process

Cisco planned for a system such as ERP to integrate Finance, Manufacturing and Order entry in order to meet its business needs. ERP enables the integration of business processes, sharing common data and practices, standardizing and providing unified view of the entire enterprise as well as producing and accessing information in a real-time environment.

Some of major challenges Cisco had at that time related to Infrastructure and business process were;

Infrastructure:

- Traditional IT department did not operate optimally
- Inflexible current systems couldn't support Cisco's growth

Solution:

- IT reporting relationship changed from Accounting to Senior VP of Customer Advocacy

- Conduct IT budgets at functional level (better funding for all IT projects)

  ➢ Disbanded central IT steering committee

  ➢ IT investment decisions on application projects pushed to line organizations but executed by central IT

Business Process:

- Convincing Management and many engineers that replacement is vital to the success of the company

- End-to end and big bank approach makes the organization at a great risk

- Need to access the impact of the change and manage user expectations

- Change management

Solution:

- Internal Involvement

  ➢ Heavy involvement from the business community – Not just IT initiative.

  ➢ Get very best people and who know the business.

- External Involvement

  ➢ Strong partner to help the selection and implementation

  ➢ KPMG became their key partner for expertise in great technical and business knowledge in the industry.

  ➢ Get knowledge and experiences from other "Big Six" firms.

- Team training

A Business Process Management approach was consider to align all aspects of Cisco with the business needs to promote business effectiveness and efficiency while striving for innovation, flexibility and integration with technology to have process optimization.

To implement the business process Cisco created below teams.

- **Executive team—**this team defined goals, allocated resources, assessed progress, and adjusted plans as needed.
- **Steering committee—**this multifunctional team provided governance and guidance for the program management team, and proactively addressed program risks and resource issues.
- **Program management organization (PMO)—**IT provided dedicated full-time staff to manage the development and deployment work. This team also provided day-to-day management of the release management and business flow teams.
- **Release management team—**this group coordinated the process of planning and implementing rehearsals and "go-live" events.

• **Business flow team**—This team was made up of representatives from the affected groups in each critical business flows, and served as the voice for business requirements combined with user perspectives during the move to Oracle.

A successful business process and management requires a good strategy, planning and committed people. Cisco was able to deliver the message to everyone in the organization that goal to make the new systems work successfully by making it as top seven goals for that year.

 Below is the life cycle of a BPM

Process Design

Process Diagnosis

System Configuration

Process Enactment
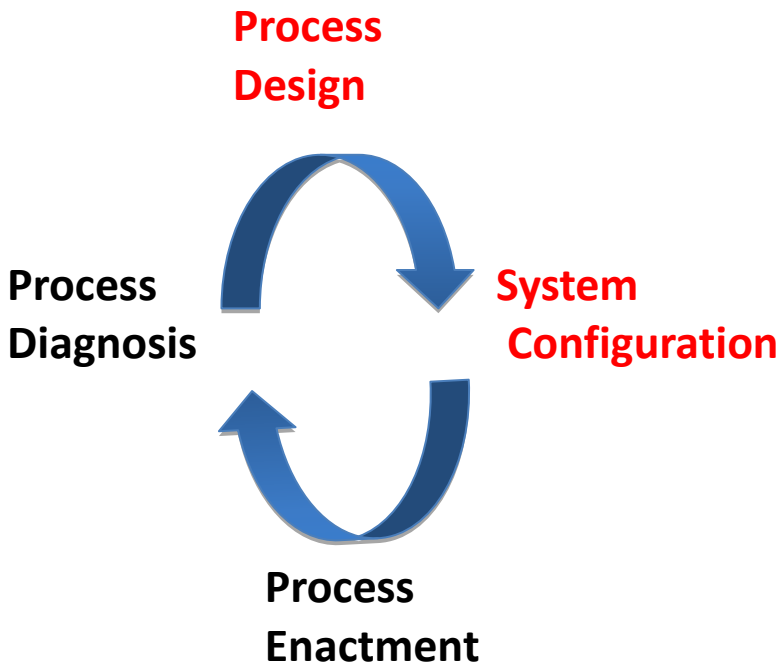
The main steps of an implementation are;

• **Analysis and design**

Cisco brought in external partners and integration partners to design the process and it also involved the best people who knew the business to make sure the design met the business needs.

- **Integration (System configuration)**

  A team of 40 people set all the parameters for oracle to be integrated and another team focused on getting the application up and running

- **Pilot and testing**

  Implementing Oracle was done by "Conference Room Pilots" (CRP); each built on a previous work to develop a deeper understanding of the software and its function.

- **Review the result and enhance**

  Once the system was running they realized that it was not able to handle the actual load, so they enhanced and fixed the issues which resulted in 3 months effort to stabilize the system.

Process

After 5 weeks of analysis and 2 days to decide Cisco finalized the implementation. (Per the case study) The main reasons for Cisco to choose Oracle were;

- Manufacturing capability

- Long-term development of functionality of package

- Flexibility of Oracle's being close by (location wise)

A budget of $15 million for the whole implementation and a time frame of 9 months to implement and go live had been finalized.

Oracle ERP

Below is Oracle e-business suite layout. This includes the ERP modules and other functionalities.

Analysis

No proper business case or cost analysis

There are many failures in ERP implementation across industries due in large part to the lack of proper planning. In the case of Cisco there was no proper business plan or cost analysis performed. They just went ahead with the motivation after the shutdown. The ERP cost is normally as below
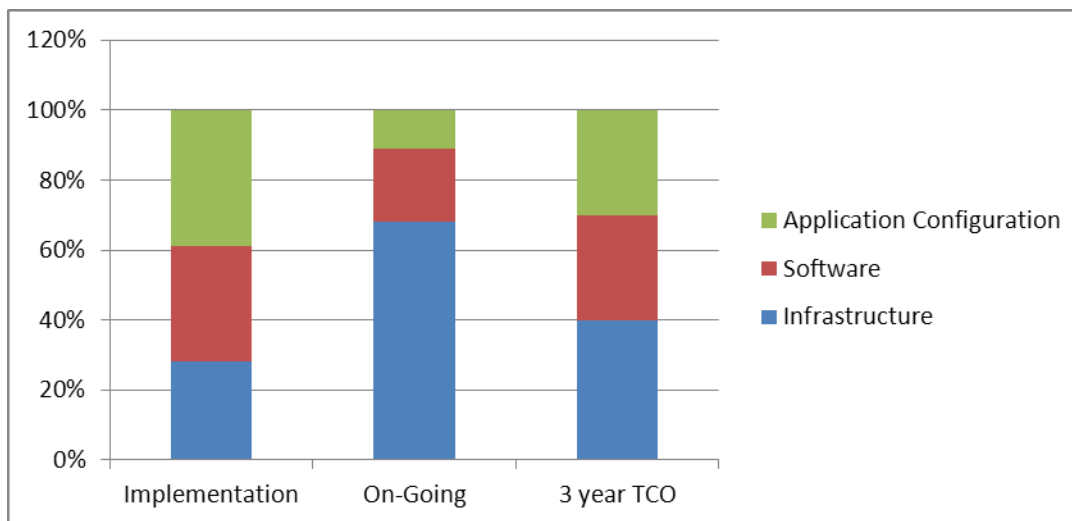
Source: Meta Group Inc, Stanford

Cisco's cost breakdown would seem to be unjustifiable, with only 14% for head cost. The downtime of the system was not taken into consideration.

Implementation time frame

Generally ERP implementations go from 1 – 3 years. But having 9 months is a much more aggressive approach. This might be the reason why parts of the system were unable to balance the load for which Cisco worked 3 more months to stabilize.

Big bang approach

Cisco went with this option since it had no other choice, but replacing critical systems all at a time poses many risks. Strong support and the ability to rely on the capacity of the system made them successful.

1% effort 80% accuracy

As per Solvik, CEO "I call it a 1 per cent effort that gave us 80 per cent accuracy...as opposed to a typical ERP approach, where you go off for six months, and overanalyze it to death." This is observation is certainly not typical.

Standardization promoted flexibility

The decision to have standardization allowed Cisco to have;

- R&D and marketing reorganized from multiple business units to 3 lines of business

- Changes completed in less than 60 days for less than $1M

- Completion of IP-based open standards architecture initiative provided centerpiece of Cisco IT architecture

- Next phase of strategy - incorporating the "Internet"

Below is the technology standardization Cisco Implemented.

- 100% UNIX at service level
- 100% Windows NT at LAN level
- 100% Windows Toshiba and HP PCs at the client level
- 100% Oracle at DB level
- 100% TCP/IP for worldwide network

Web presence

When Peter Solvik joined Cisco he noticed that Cisco's IT department was too traditional. Cisco's web presence was almost non-existent. After the infamous shutdown of two days, it became clear that there was a need act expeditiously. Top management figured out that there was a lot of room for improvement with the company's interaction with customers, partners and suppliers. The aim was to allow them to do business more efficiently and effectively with Cisco.

Management was aware that customers were the focal point of its business. Hence, they launched cisco.com to consolidate their web presence. Cisco is one of the first organizations which adopted e-commerce. They began with simple transactions with a few products. Within 7 years they completed configuration and order placements for the company's entire product line.

Solvik knew the importance of Web Presence for an Organization. There were a lot of benefits to having a comprehensive web presence such as:

- Business is open 24*7

- Improved Customer Service

- Reach new markets with global audience

- Automation, Productivity and Profitability

- Customer Feedback

- Improved Advertising

Cisco has used the internet and its own information systems in order to create business ecology around its technology standards, to concentrate on product innovation and to showcase its own use of the internet as a marketing tool. Cisco has used the internet, e-commerce and information systems as part of its broad strategy of establishing a dominant technology standard in the Internet era. Cisco has also been a leader in adopting the virtual organization model. Its own use of the internet and information systems has been vital in coordinating the virtual model.

Cisco carries out its business functions via a virtual organization, which includes itself and a variety of business partners. These include resellers that sell and support Cisco products, service specialists providing network integration and operations. It uses the Internet and IT to tie this virtual organization together, leveraging the capabilities of external partners to support rapid expansion while maintaining high levels of customer service.

Conceptual Framework

In order to analyze the role of Internet, IT and e-commerce in the organization we employ a conceptual framework adapted from Hagel and Singer, 1999.

Conceptual framework (Source: Hagel and Singer, 1999)

Strategic focus	Competitive environment	Competitive success factors	Structure and management
Product Innovation	First mover advantage	Innovation, new product introduction, Strong brand	Focus resources on R&D and acquisition
Operational Excellence	Decreasing or constant returns	Execution is the key	Increase scale and geographic scope
Customer relationships	High customer acquisition cost. Possible increasing returns from loyal customers.	Keys are to attract and retain customers.	Focus resources on marketing, sales and customer service.

This framework identifies three areas of strategic focus for firms – product innovation, operations, and customer relations. It defines the features of each in terms of economics of competition, competitive success factors and the type of management strategies required for each. In order to be successful, a firm needs to concentrate on one of the three areas of strategic focus and to work with external partners to provide necessary capabilities in the other areas. A good example of this can be in the PC industry, where Microsoft, Intel and various component suppliers focus on product development, PC vendors such as Dell focus on customer relationships and final product assembly.

Within this framework, we would argue that Cisco's strategic focus is on product innovation, which is critical for any company attempting to establish technology standards in a highly dynamic technological environment. Meanwhile, Cisco has chosen external partners to provide much of the necessary competence in operations and customer service, coordinating a virtual organization that extends well beyond its own corporate boundaries. For instance, it outsourced much of its manufacturing and relies on resellers, consultants and other outside specialists to provide network integration services and customer support.

Cisco's product innovation strategy is supported by extensive use of the internet and e-commerce. This model goes far beyond simply accepting orders online or using EDI to transmit orders to suppliers. Instead, Cisco integrates its customers, suppliers, channel partners and service partners into its own information systems.

Evolution of Internet strategy

While using the internet is considered a core element of Cisco's strategy, it evolved mostly through experimentation, rather than through any grand design. Since 1995, Cisco has been developing corporate information systems to support its various business processes. This includes implementing application such as the Oracle ERP suite, building a robust IT infrastructure and creating architectural standards for the entire company. Building on this IT infrastructure and an IP based open standards architecture Cisco began Web development in earnest. The aim was to move beyond using the network as an information sharing tool.

Cisco's Internet and e-commerce applications can be divided among three categories:

1. Intranet

2. Extranet

3. Internet

Cisco's web-based applications

Intranet	Extranet	Internet
Employee self-service for travel, benefits, product information	Supply chain integration, sharing of forecast, order and inventory information	marketplace for net commerce by customers, resellers, partners
Communication and distance learning	New product development sharing of design, test ramp-up, quality specification information	Technical Assistance, software Library and Open Forum for customers, resellers, partners
Collaboration and workflow management Executive information systems and decision support systems		Customer service for non-technical issues Internetworking Product Center online ordering by authorized customers and resellers

Any case study about Cisco written before 2000 would mention almost nothing but success. After the year 2000, Cisco's stock prize surprisingly collapsed. Many blamed the top management. However, it raised one question why Cisco's touted information systems networked business model failed to help it anticipate and mitigate the effects of the downturn.

The inability of Cisco's sales forecasting system to offer any advanced warning suggests limitations of a highly regarded Information system. It also raised the question of how well the integration of all the different systems was done. In the end, an information system is only as

good as the data entered in to it. If the people gathering the information fail to pick up on market signals then it is doomed.

Customer and client relationship management

CRM is a business strategy directed to understand, anticipate and respond to the needs of an enterprise's current and potential customers in order to grow the relationship value.

There are three basic parts to a successful approach towards employing CRM.

Acquire

Investment in CRM is very crucial in this Information aware world. To give a broad perspective, the customers are more informed and products offered are closely scrutinized on a variety of parameters. Many of these parameters are customer defined, and hence it is incredibly important to channel the products which don't deviate much from the customer expectation.

Cisco tackled the primary factors which enable successful CRM. Let us look at how they achieved it.

1. Obtaining executive sponsorship

For any project to be implemented, the people who contribute financially form the core subjects of interest. It is very crucial that the investors understand the importance of spending towards CRM.

Now as Cisco produces the products which are targeted at companies who want to augment or get started with a CRM implementation, the onus lies with Cisco to convince the potential investors to trust them with their products.

How?

Cisco approached this problem by performing extensive interaction sessions with the heads of the company. Coming forth with a specific solution plan for their business needs it goes without saying Cisco brings along a name that is difficult to ignore as far as business visibility goes.

Mr. Babu the founder of Vonage recounts his experience working with cisco by stating ""*Everything Cisco was doing made absolute sense to us," he recalls. "Today, we consult with Cisco on its cable headed, media gateway, customer premises equipment (CPE), and SIP-based VoIP strategies. In return, Cisco has advised us on our packet telephony-based technical strategy. I would be hard-pressed to think of some aspect of our technical strategy in which Cisco is not involved*."

Hence as a company which understands the importance of CRM they proceed professionally in targeting the companies which are interested in their product. By providing solutions that not only benefitted themselves, Cisco took extensive efforts to align the business process of Vonage with the technology they had to offer.

Retain

This paradigm stresses the importance of retaining a loyal customer base. Statistics indicate that it is 60% more expensive to obtain a new customer than to retain an existing customer. So efforts have to be taken to ensure that those first time customers are retained.

The first key to approach this problem is improving availability. How does Cisco communicate with their customers when they are in need of any information? The solution is www.cisco.com

"A comprehensive, web-based, online resource for information and networked application with nearly 600,000 active registered users. The website goes beyond the regular troubleshooting sources of information and in fact interacts and educates the customers with various programs such as forums, certifications and training programs."- Richard Nolan, Harvard Business School Publishing.

For example, executives not only learn the Cisco technology through various certification programs, but also have the opportunity to be Cisco qualified, which is a veritable reputation to have in the corporate network world. By investing in internet based solutions they saved about $506 million dollars annually. - Ten minutes with John Chambers, NASDAQ: The international Magazine, Issue 29, January 2001

Localization is an important factor when catering to the needs of people from different languages; hence Cisco's website was translated into 17 languages with about 68 different country pages.

Criticism of being aggressive competitors:

Cisco had to deal with certain appeals of being excessively aggressive with their business vision and being labeled as trying to impart a monopoly in the realm of networking. In a reported instance Ken Widner, the IT director for Interstate Battery Systems, opted for Juniper instead of Cisco and later responded that he had to face their wrath.

"Cisco also called Widner's boss after Juniper was chosen, he said. Cisco claimed he was jeopardizing Interstate Battery's infrastructure"

Certainly questioning an IT manager's credentials for not buying Cisco's product doesn't bode well under the margins of healthy competition. Cisco lost more than a few brownie points. For a company with such wide reach, one feels Cisco must have behaved more professionally or come up with a package plan which was competitive enough to be considered.

Cisco an antiquated technology?

The problem faced by many companies employing Cisco technology is that the firm is somewhat inadequate in providing the update patches to the networks. i.e. their competency in software solution doesn't do favor in using their networking technology.

Hilary Mine, executive vice president, Probe Research says "*Software development is* "***not only a key to Cisco's turnaround, but if they do not get their house in order, they will be left behind***"

The approach of Cisco to address the rapid success of their competitors such as Juniper sounds like denial. Martin McNealies, director of IP product management says "*What you call legacy I call time-proven and hardened,*"

As cisco is proven pioneers this statement sounds defeatist in every essence and that doesn't bode well with customer confidence, especially with the rising challenges of new technologies and rapid adaptation to the problem.

Dwelling on time would only exacerbate certain problems and might lead into system crashes and mean heavy punitive damages from litigation. We expect Cisco to be more proactive in this regard and introspective with their innovation department

EXTEND

The third but not the last key to ensure successful implementation of CRM is Extending the relationship with customers by making sure that the supplementary solutions are also bought in. For example if a company comes to Cisco to deal with a problem it has with the way its switches are managed, Cisco goes beyond what is required and provides a comprehensive analysis of how using other Cisco products could/would become more productive for the company. This requires a lot of R&D as the supplementary inventory has to be aligned to the business needs of the customers. In other words, the company needs constant innovation and the ability to provide cutting edge technology in order to boost this sector of CRM.

The usual customer base is taken care of but this is a new territory where Cisco hasn't excelled as well as one would expect them to. John Chambers, Cisco's CEO, had this to say in his conference with the stock holders. In an effort to allay the fears of the consumers and partners alike he said:

""*We have been slow to make decisions, we have had surprises where we should not, and we have lost the accountability that has been a hallmark of our ability to execute consistently for our customers and our shareholders,"*

This might be attributed to a lackadaisical approach in the otherwise competitive spirit of Cisco or the emergence of multiple equally efficient competitors like Juniper and Hewlett Packard.

In summary, the following are the immediate challenges that Cisco needs to address:

1. Increased competition:

    Our solution: Invest more in R&D, and introspect into the solutions which are fast becoming legacy and upgrade them to address immediate and current industry needs.

2. Controversial arm bending tactics:

    Usually big firms do get away with arm bending tactics, but in a world of wikileaks and information spy's lurking in every corner. It is penny wise and pound foolish to resort to threatening techniques. Instead be more proactive and forthcoming in addressing mistakes and avoid public PR disaster.

3. Involvement in controversial projects:

    Cisco was cornered in their efforts to accede to China's demand to develop a network which would enable them to triangulate dissidents of their government faster. Though Cisco might see this as a purely commercial relationship, it doesn't bode well when the popular consensus is that information and right to expression must be maintained at all costs. Change of direction in investment.

4. Better Integration: Cisco has rapidly integrated many competitors at a fast rate. But the overhead of integrating them into the company's vision needs more direction. As pointed out by HP's Director of Networking, Subhodeep Bhattacharya "*Cisco has acquired close to 30 companies but are not integrated. It has just one part of the networking*"

Instead of brushing them aside as competitive slander, Cisco should provide rebuttal by showing visible proof to the industry watchers that integration is their top priority post acquisition.

Conclusion

Overall Cisco implementation of ERP and web enabled applications is successful. Company estimates puts its interconnected supply chain savings at over $550 million in 1998. (Carl Redfield, Cisco corporate VP of manufacturing, slide presentation, November 1998.)

Cisco Systems, the often-described leader in supply chain management, took one of the largest write-offs of inventory in American industrial history when it wrote off $2.5 billion in parts inventory in its warehouses. The Cisco case differed somewhat from the other disasters because Cisco's supply chain management system actually worked, but its managers refused to listen to the system's predictions for inventory, instead relying on their own somewhat inflated "sense of the market." - **E-Commerce: business, technology, society**, Laudon and Traver, 2001

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