

# ENTERPRISE COMMUNICATION AT

**CISCO SYSTEMS**



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## 1. INTRODUCTION

Technology has been a significant reason for progress in the world. Many players in technology have been credited for taking technology to the next level. On many occasions, technology has become an integral part of our routine such that we use technology like it always existed. Of many such players who have played a significant role in the sophistication of technology, Cisco has become synonym to many parts of technology especially enterprise communications.

This paper goes into an in depth analysis of the enterprise communications industry and Cisco's strategy.

## 2. INDUSTRY

An analysis from Frost and Sullivan finds that the IP telephony industry earned revenues of \$2.68 billion in 2008. Due to the economic situation being faced by the world, decline in revenue is expected to continue until 2010. However, the market will gradually recover by 2011 and healthy growth is forecasted until 2015<sup>1</sup>.

### 2.1. Market Overview / Definition

Telecommunication services industry consists of wireless and integrated telecommunication markets<sup>2</sup>. The wireless telecommunication services include cellular phones, pagers and any other wireless or cellular telecommunication services. The integrated telecommunications market consists of voice & video telephony and other non-voice information transmission using fixed lines (wire lines) or network equipments other than wireless systems. This report will focus on integrated telecommunications, mainly on voice telephony, how it has integrated with other forms of telecommunication services and the future of this industry.

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<sup>1</sup> (Sullivan, 2009)

<sup>2</sup> (Global telecommunication Services, March 2009)

## 2.2. Evolution

Until a few years ago, and in many cases even today all voice communications traffic was/is handled over the circuit switched PSTN. A privately owned communications system called the Private Branch Exchange (PBX) is physically located on a customer's premise, provides dial tone and telephony features to subscribers, and is linked to a central office communications system (the "central exchange") via trunk circuits for access to and outlet from the Public Switched Telephone Network (PSTN). Certain other equipments that are similar to PBXs in terms of core capabilities and functions were also available as a central exchange viz. Key Telephone System (KTS) or the Hybrid system. Some of the most well known PBX manufacturers with huge customer premise installations include Avaya, Nortel, NEC, Siemens and Alcatel. These manufacturers have dominated the telecom space for many years. The technology provided by them has been proprietary and difficult to integrate with disparate systems. Thus an organization was often tied to the manufacturer of their initial equipment. Due to increased switching costs, organizations often used their PBX systems for an average of 7 years.

Till more than a decade ago, organizations had separate systems that dealt with voice, video & data networks. Back then, the business processes were not as complicated and hence there did not seem to be a need to integrate these systems. Over time, PBXs have become far more sophisticated. Many facilities and functions have been added to create a centralized communication hub. These services include automated attendant greetings, recorded messages, interactive voice response, connection to voice mail, automated call distribution, call forwarding, wireless services, conference calling and many more.

A new crop of IP PBX systems has entered the market packed with similar or enhanced features at much less cost. This has eased maintenance of PBX and integrations of disparate systems. New technologies such as Voice over Internet Protocol (VoIP) are taking over traditionally proprietary devices. This technology converts analog audio signals into digital form for transmission. Even during periods of no communication, the analog lines remain connected, thus making transactions much more efficient. VoIP packets are sent and received whenever there is activity. The information packets are sent over any open rather than a

dedicated line making communication much more effective. Most companies can recognize huge savings using this technology. The compression of the information and mode of delivery across multiple channels and routers makes packet switching more efficient, quicker and less expensive. The volume of simultaneous communication can be significantly increased using packet switching over circuit switching<sup>3</sup>.

Once IP telephony was in place and proven successful within enterprises, the contact center began to experiment with the technology. IP endpoints for contact centers and for enterprises – such as IP phones and soft-phones – reduce an enterprise's equipment and infrastructure overhead, thus reiterating the primary driver of IP telephony i.e. cost reduction. The value of IP to the enterprise increases in the case of true IP endpoints that reduces or eliminates the need for complex and expensive CTI projects.

IP telephony has provided enterprises with greater benefits, such as remote working, collaboration, improved scalability, expanded reporting capabilities, and easier integration of multichannel interactions<sup>4</sup>. Since the base platform for data and voice has become common with the use of IP PBX, it has become easier to integrate PBXs with data networks across different geographies. This gives enterprise communications a whole new dimension by allowing everyone within the organization, across different offices and spread across different geographies, to be connected to the same system. The introduction of IP networks has transformed the way enterprises use telephony. Vendors and service providers have always raised the enterprises' awareness of the benefits of IP with IP not only being a less expensive option than traditional telephony networks but also having a network capacity that allows video conferencing to become a reality. Video conferencing has evolved from the expensive world of traditional telephony to the more affordable world of session initiation protocol (SIP) and IP architectures. In addition, presence engines and enterprise-wise unified

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<sup>3</sup> (PBX Evolution: Where It Was, Where It Is & Where It's Going, 2008)

<sup>4</sup> (Key Trends in Converged Communications: Vendor strategies, market development and emerging opportunities, 2009)

communications solutions offer the promise of having a unified enterprise in a single, IP centric environment.

### 2.3. Potential future evolution

TDM systems are slowly phasing out with enterprises being open to adopting IP telephony. By 2010, IP telephony shipments will have overtaken TDM shipments<sup>5</sup> while from a revenue standpoint IP telephony has already overtaken TDM [Exhibit 1]. The need for these systems and its services is being driven by a growing focus on productivity, internal efficiency improvements and an increase in flexible working. Unified Communication is the next stage in achieving fully digitized communications and encompasses new features and innovative functionality to enhance the communications process further. Vendors are using unified communications and its features as a tool to encourage enterprises to shift to IP Telephony. Unified Communication is a way to manage all communications including voice, email, fax or instant messaging through one interface. IP telephony and unified communications enable faster connections to colleagues through the use of centralized address books and click to call functionality. Efficient usage of these technologies ensures time is not wasted looking up colleagues or customer details and presence allows users to assess availability and quickly decipher the best means of communication. A combination of these technologies can help optimize business processes by speeding up employee administration time.

While many organizations are using some elements of Unified Communication, Unified Communication is still in the early adopter phase. The current economic downturn reiterates the need for efficiency. The workforce has become demanding and organizations are recognizing the need to get creative with flexible work schedule. Thus, in the future, collaboration will have to be integrated with core business processes. Therefore, going forward, enterprises will recognize the need for Unified Communication. The total market for Unified Communication is forecast to grow at CAGR of 12% from \$21.5bn in 2008 to \$37.3bn by 2013<sup>6</sup> [Exhibit 2].

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<sup>5</sup> (The future of IP-based services, 2008)

<sup>6</sup> (Trends in Unified Communications, 2009)

US is the largest geographical market for UC forecasted to account for 28% of the global UC market by 2013. Japan is a far second accounting for 11% of the global UC market in 2008. China is one of the faster growing markets and is forecast to grow at a CAGR of about 19% between 2008 & 2013 while India is forecasted to grow at a CAGR of 17.2%<sup>7</sup>.

The step after Unified communications would be to link business applications and mobility. This will help businesses as employees would not have to return to office to complete their tasks. Employees have different degrees of mobility, and communication platforms must allow interaction across organization irrespective of user's profile. It would be imperative to link each mobility group to the rest of the organization. However, this technology has its set of limitations and has tremendous scope for improvements. There are external conditions and limitations related to the mobile device that can hinder a mobile employee's performance. These technology limitations need to be communicated to the customers, lest they expect their mobile employees to work as efficiently as those at their desks.

#### 2.4. Competitive Landscape

The telecom market is maturing and consolidating and so is the market of UC with a number of mergers and acquisitions. Currently no single vendor is able to offer complete end to end solution in the market and this is the case when UC solutions are extended to mobiles. Enterprise mobile users are restricted to the office premises and so network service providers are also a part of the value network. Cisco, Siemens Enterprise, Avaya and Nortel are leaders in the market for UC solutions and would be the first option for enterprises looking to invest in UC. Over the next 18 months these vendors are expected to remain market leaders but they will have to innovate to maintain their position.

While there has been much consolidation in the voice/data convergence market, there is room for innovation and non-traditional communications vendors to play a role in any developments. Both IBM and Microsoft, whose strengths have not traditionally been in the communications field, have entered the UC market. These vendors are also catalysts in the

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<sup>7</sup> (Trends in Unified Communications, 2009)

changing market focus from hardware to software and services. All of the leading vendors have different levels of partnerships with these vendors to bring joint solutions to market with IP telephony and unified communications applications. The high visibility that IBM and Microsoft have through their desktop and email programs, alongside IBM's successful systems integration and consultancy business, mean that traditional communications vendors' presence is likely to be boosted by partnering with these vendors as well as allowing Microsoft and IBM to gain greater validity<sup>8</sup>.

Although the standpoints of Microsoft and IBM as unified communications vendors means increased competition, it also indicates that there are likely to be more partnerships and possibly acquisitions among vendors.

## **2.5. Industry analysis**

Customers, key suppliers, partners, manufacturers all form a part of the value network for players within this industry. The following section analyses each player in this value network using Porter's 5 forces. Users of enterprise communications are spread globally, with companies having offices across the globe, and locally, with companies confined to only one region. The industry is dominated by few players who have the major chunk of the market share thus making it an oligopolistic industry. Even with the global spread of organizations, there are differences between countries in terms of culture, administration, geography and economy. The following section also analyzes the enterprise communications industry using the CAGE framework developed by Pankaj Ghemawat.

### **2.5.1. Porter's 5 Forces**

The enterprise communications market will be analyzed taking enterprise communication service providers as players, key buyers will be taken as end-users and component producers will be taken as suppliers.

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<sup>8</sup> (The future of IP-based services, 2008)



**Bargaining power of buyer – STRONG**

The industry is currently dominated by top 4 players and is in the process of consolidation. These players provide end-to-end telephony solutions. However, there is an increase in small players in the industry providing software based solutions that meet immediate needs of buyers. With the current economy, buyers have become highly price sensitive. Thus, while they need the technology, they have the power to choose between highly priced complete solutions offered by incumbents or effective solutions offered in silos by new entrants. Also, with the technology moving towards SIP, equipments are no longer proprietary, thus giving the buyer the power to choose between vendors without worrying about integration issues due to owning proprietary technology.

**Bargaining power of supplier – MODERATE**

Players like Cisco are vertically integrated and use their own servers to house the communication software. However, players like Avaya, Nortel source equipments from suppliers to house their communication software. Since vendors have greater options to source equipments, they have a greater bargaining power. However, with the growing trend in Unified Communication, software suppliers like Microsoft & IBM play a significant role in the solution. Due to the existing presence of Microsoft OCS or IBM Lotus Notes at the client site, suppliers like Microsoft and IBM have a greater bargaining power. Thus, in totality, the bargaining power of suppliers in the industry is moderate.

**Threat from New Entrants – MODERATE**

The threat of new entrants into the communications equipment market is moderate. A high level of product differentiation combined with high fixed costs of manufacturing facilities present significant barriers to entry for new players.

There are many small software companies entering the market into the UC category where there is no significant investment needed. This is not a huge threat to the incumbents since organizations prefer a one-stop-shop due to ease of integration of technology. However, big players like Microsoft and IBM have developed their unified communications strategies over

the last couple of years based around their strengths as desktop and email providers. This is a timely move from both vendors as unified communications is becoming better understood and more widely adopted. Although they won't pose a serious threat to traditional communications vendors yet, due to their lack of IP PBX, telephony equipment and experience in this industry, both companies will become stronger through technical developments and more strategic partnerships. Although the standpoints of Microsoft and IBM as unified communications vendors means increased competition, it also indicates that there are likely to be more partnerships and possibly acquisitions among vendors. This would happen in the light of increasing number of enterprises looking for a single vendor for both IP telephony and software collaboration.

**Threat of Substitutes – WEAK**

The increasing need for efficiency and cost savings paired with a lack of substitute availability results in a low threat of substitutes to the enterprise communications market. Products like Skype are used by certain organizations to fulfill their VOIP requirements, however the need for overall communication integration is increasing and therefore the threat from players like Skype is relatively low. New products and methods of communication are introduced by established players and therefore the threat of substitutes is weak.

**Threat of Rivalry – STRONG**

Larger players within the industry are multinational players such as Cisco, Avaya and Alcatel-Lucent between whom there is fierce competition despite a high degree of product differentiation. The competition is not only about the biggest market share but it also involves the potential business partners, such as Microsoft, IBM & Polycom. Rivalry is enhanced further by high fixed costs needed for the production process and exit costs created by production facilities. In comparison to the first quarter of 2008, sales volume in the telephony market reduced by 23% during the first quarter of 2009<sup>9</sup>. The poor market growth rate increases the need to compete for limited revenue and so increases rivalry. Overall, the level of rivalry within the communications equipment market is strong.

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<sup>9</sup> (Blood Steve, August, 2009)

### 2.5.2. CAGE Analysis

The CAGE framework is an acronym for four broad distance components viz. cultural, administrative, geographical & economic<sup>10</sup>. While these four components are interconnected, it is helpful to understand the distances in a particular industry between different countries from all four perspectives to understand the ease and worth of doing business in a particular country. This section would analyze the enterprise communications industry using the CAGE framework.

#### Cultural Distance

Cultural distances can affect an organization's strategy in each country. These cultural distances can arise due to language, behavior, attitude, typical size of organizations etc. Like in the case of corporate telephony, the size of enterprises is small in countries like France & US. Smaller enterprises may have lower numbers of mobile workers and therefore demand for mobility technologies is not high in these countries. German enterprises are known to be early adopters of technology and this explains the higher penetration of mobile technology solutions amongst these enterprises. Germans prefer to plan in advance, thus German enterprises are ahead in both penetration and the number of solutions deployed. They are also known to place importance on tight control and security, which explains why a greater number of German enterprises have deployed three or four mobility technologies: they are likely to have purchased mobile management and security solutions in tandem with mobile applications.

Enterprises within Western Europe and North America were early adopters of mobility solutions and have a better understanding of the potential ROI that can be achieved through a mobility deployment<sup>11</sup> [Exhibit 3].

Analyzing the results by geography shows slight variations in preferences with the US and UK enterprises preferring on-site deployment, while Germany, Spain and Italy prefer hosting their enterprise telephony. This is due to cultural differences in procurement methods. In general,

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<sup>10</sup> (Ghemawat, 2007)

<sup>11</sup> (Enterprise Communication Market Outlook, 2008)

enterprises are split with regard to their channel-to-market preferences, around a third prefer to purchase direct from a supplier, a third through a national reseller and a third from a local reseller. However analyzing the results by geography shows a wide variation in preferences: for example, the majority of enterprises in the US prefer to buy direct from a supplier, while French enterprises prefer to buy through a national reseller and enterprises in Italy, Spain and Benelux are in favor of buying through a local reseller.

Due to these differences, a vendor cannot move with the same strategy to ever country and hence needs to modify strategy based on the country it is targeting.

Although Cisco has the highest degree of share of mind in all regions, other vendors have more influence in their domestic markets. Unsurprisingly Alcatel, a French company, is stronger in France and Benelux whereas Siemens holds a higher degree of influence in Germany. These vendors need to expand their global reach in order to compete with Cisco, through resellers or by targeting regions where they are weaker with increased marketing as well as gaining a greater share of the market in their home regions. Although enterprises are more likely to consider a local vendor, particularly if company culture is similar and prior engagements have proven successful, they still have a long way to go to compete with US-based Cisco<sup>12</sup>.

Unified communications also has text to speech and speech to text as features in voicemail, fax-mail, interactive voice response etc. In order to successfully sell solutions of this kind within a region, the company should be able to provide solutions in the local language. Thus, there is moderate cultural distance within this industry.

### **Administrative Distance**

Most products sold in the United States need to fulfill the Federal Communications Commission's requirements and regulations (including those related to emissions testing, safety, electrical noise and communications standards compliance). The FCC requires that no harm is caused to telecommunications networks by customer premises equipment. It requires

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<sup>12</sup> (The future of IP-based services, 2008)

equipment manufacturers and suppliers to either seek certification from a Telecommunications Certification Body, or provide a formal declaration of conformity to consumers and the Administrative Council of Terminal Attachment<sup>13</sup> to demonstrate compliance to the appropriate technical criteria.

In countries outside of the United States products must meet various requirements of local telecommunications authorities. In many Asian countries, the Department of Telecommunication has placed restrictions on the configuration of the enterprise network spread across geographies. This is done to avoid situations like toll bypass which results in loss of revenue for the government. In such situations, vendors need to change their value proposition from a creating a one look system to a more efficient system. Also, in many developing countries, the wireless technology has not developed to a large extent. This limits the applications available through unified communication. Thus, in many countries, the administrative distance is large not allowing an exhaustive use of the solution being provided. Therefore, sometimes enterprises in these countries do not see the benefit of deploying such sophisticated technologies.

### **Geographic distance**

The purpose of IP telephony, unified communication and video conferencing is to reduce the geographic distance between various offices of large multinational companies. Thus, there is limited or no geographic distance in this industry.

### **Economic Distance**

North America, Western Europe and Asia Pacific are clearly the largest markets for UC solutions. These regions also show the most growth potential. Western Europe, North America and Asia Pacific are the dominant regions due to their higher levels of economic development and larger concentration of multinationals and large enterprises. In developing regions like

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<sup>13</sup> (Telecommunication Networking Equipment Manufacturing in the US, 2009)

Central and Latin America, other areas of IT spending tend to take priority and will continue to do so in the foreseeable future<sup>14</sup>.

In developing regions the growth of new enterprises means that there is a large green-field market where enterprises have not made costly investments in legacy communication technology for example time division matrix (TDM) PBXs. Also, in growing economies multinationals tend to take advantage of the large pools of increasingly skilled labor by setting up bases which they are likely to outfit with the latest technology and infrastructure to maximize their return on investment<sup>15</sup>. This increases the opportunity for enterprise solutions within these regions.

Enterprises in France and the US have the lowest penetration whereas enterprises in Germany and Spain have the highest. This is because, a large proportion of the enterprises in France have smaller IT budgets of less than \$1m and almost 50% of the enterprises in US have fewer than 1,000 employees.

Assessing the market by geography reveals that the enterprise mobility market is saturating in the Nordics, Germany and Australia and penetration is not likely to increase much in these regions. Australian enterprises are planning many investments on upgrades. German and Nordic enterprises will not be making many 'greenfield' or 'brownfield' investments. Italy and France are regions that vendors should target as current penetration is lower and predicted growth is higher. This is also related to enterprise size and the market is less likely to grow among large enterprises. The opportunity here is in the mid-market with enterprises of between 100 – 999 employees having planned a number of investments in mobility<sup>16</sup>.

Thus, the CAGE framework analysis indicates that while there are few top players in the industry who influence the industry progress and there are many organizations that are

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<sup>14</sup> (Trends in Unified Communications, 2009)

<sup>15</sup> (Trends in Unified Communications, 2009)

<sup>16</sup> (Enterprise Communication Market Outlook, 2008)

geographically spread and need a single vendor, there are certain challenges that these organizations face when dealing with cultural, administrative & economic distances in different countries. This makes the industry semi-global. While, there is some level of globalization in the industry and the industry is not completely regional, organizations do have to tweak their strategy depending on which region they are targeting.

### **3. CISCO SYSTEMS, INC.**

Having seen the dynamics within the enterprise communications industry, the next few sections will focus on one major player within the industry viz. Cisco Systems.

#### **3.1. Cisco History**

One of the largest players in the telecom industry, Cisco founded in 1984 became public in 1990 and in 2009 is ranked number 57 in the list of Fortune 500 companies with revenue of \$36.1billion. Cisco hardware, software, and service offerings are used to create Internet solutions that allow individuals, companies, and countries to increase productivity, improve customer satisfaction and strengthen competitive advantage. The Cisco name has become synonymous with the Internet, as well as with the productivity improvements that Internet business solutions provide<sup>17</sup>. Cisco has always strived for product leadership – from its rudimentary routers to today's virtual machines<sup>18</sup>.

#### **3.2. Business Overview**

Cisco Systems (Cisco) is into the business of networking and other related products and services for the communications and IT industry. The company's products are used for the purpose of data, voice and video transmission. Its major products include routers, switches, IP telephony and products related to network access, security, optical networking, storage area networking, wireless technology and home networking. The company's products are used by corporations, public institutions, telecommunications companies, and businesses in general. Cisco is a

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<sup>17</sup> (News@Cisco -> Fact Sheet)

<sup>18</sup> (PWC, 2009)

dominant player in the market place with operations in the North America; Latin America; Europe, Middle East and Africa; and Asia Pacific regions.

Cisco Systems, Inc. generated revenues of \$36,117 million in the financial year ended July 2009, a decrease of 8.6% compared to the previous year. The company's net income totaled \$6,134 million in fiscal 2009, a decrease of 23.8% compared with 2008 [Exhibit 4].

Cisco's operations are categorized into following five offerings with each category having a product & services component to it –

- Network systems
- Collaboration, Voice & Video
- Security
- Data Center
- Mobility/ Wireless

In the network systems category, Cisco offers a wide range of routers – from core network infrastructure for service providers and large businesses to access routers for branch office to home network deployments for telecommuters and consumers. The company's routers host a wide range of services and advanced technologies, offering integrated voice, video, data, and mobility for homes and businesses. In this category, Cisco also offers switches for use in campuses, branch offices and data centers. These products offer connectivity to end users, workstations, IP phones, access points and servers. Many of the switches support an integrated set of advanced services to offer integrated network solution for the organization.

Cisco security solutions include a range of information security products and services. Its self-defending network integrates security into the network, adapts to new and evolving threats, and enables collaboration across all security elements.

In the Data Center category, Cisco provides storage area networking products that offer multilayer, scalable, and secure connectivity between servers and storage systems, including products such as storage arrays and tape drives. In addition, this category also includes



switches and unified computing applications for use in data centers. The unified computing application is a next-generation data center platform that unites computing, networking, storage access, and virtualization into a cohesive system.

Cisco's wireless technology offerings include various in-building and outdoor wireless networking products. These products include access points, wireless LAN controllers, wireless integrated switches and routers, wireless management software, wireless LAN clients and client software, bridges, antennas, and accessories. Wireless services also include mobility services for service providers.

Cisco's collaboration, voice & video services include unified communications solutions that integrate voice, video, data and mobile applications on fixed and mobile networks. The unified communications products include IP phones, client software, servers and network appliances supporting call control, contact centers, messaging, conferencing, voice mobility and collaboration. Cisco Unified Communications is part of a solution that includes network infrastructure, security, wireless, management applications, lifecycle services, flexible deployment, outsourced management options and third-party applications. These products include the web-based collaborative offerings that allow users to share presentations, applications, documents, and desktops, with full-motion video and integrated audio. Its other products also include emerging technologies such as Cisco Tele-Presence systems. Cisco also offers service including technical support services and advanced services. The company offers technical services to support functionality of its products. It also offers advanced services to provide responsive, preventive, and consultative support of its technologies for specific networking needs. The advanced services program supports networking devices, applications, and complete infrastructures.

Cisco's products for consumers include video systems with digital set-top boxes and digital media technology products, modems & gateways and home networking products through its partnership with Linksys. Other products of the company comprise optical networking

products, cable access, and service provider voice-over-IP (VoIP) services. The company provides optical networking products for both the enterprises and service providers.

Cisco thus covers a wide gamut of the telecommunication industry with products and services available for consumers, small businesses, large enterprises and service providers.

### 3.3. Corporate Telephony at Cisco

Cisco leads in global market share in enterprise communications and has a strong presence in most countries. It has credibly positioned itself to provide the critical data and voice communications infrastructure necessary to be a contender for the UC and collaboration (UCC) market. Cisco's offering comprises a call processing platform; unified messaging and contact centre products; web, video, and audio conferencing; and mobility solutions. Presence capabilities and converged communications infrastructure management solutions support all above features. Cisco's Unified Communications Manager is a scalable, SIP-based telephony platform, complemented with a portfolio of products to provide a complete UC solution. It also has a wide range of partner products to provide some of the largest installations of IP telephony<sup>19</sup>.

Cisco also provides an application development environment that helps enterprises and a network of partners to build enterprise specific applications that integrate to the telephony infrastructure. Cisco partners with both IBM and Microsoft, but has a stronger relationship with IBM due its business partnership and product interoperability alliance<sup>20</sup>. Cisco's approach is very impressive and combines network capabilities with integration to common desktop tools. Cisco's UC solutions are suitable for organizations of varying scale, from SMBs to large enterprises, and can be delivered as an on-premise or on-demand solution.

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<sup>19</sup> (Blood S, 2009)

<sup>20</sup> (Key Trends in Converged Communications: Vendor strategies, market development and emerging opportunities, 2009)

As the leading data network provider it has a large installed base among enterprises and therefore has an advantage over many vendors in the converged communication market. Cisco has a significant advantage in migrating from data networks to voice networks, as it is able to provide a one-stop-shop by implementing and managing the end-to-end solution – from routing and switching to telephony end-points. Acquiring WebEx also allowed Cisco to expand into the collaboration and web conferencing market. With an existing video Tele-presence solution, Cisco's acquisition of Tandberg in October 2009 has built a video solutions portfolio within the UC portfolio to offer customers a solution for every conferencing need.

The UC market is becoming a significant proportion of Cisco's revenue stream and as per Cisco; the market has a lot of potential. Cisco directly targets SMBs and large enterprises with its Cisco Unified Workspace Licensing bundle, available in different editions depending on business need.

Cisco has the largest degree of share of mind of almost 40% among the enterprises surveyed, while IBM, Siemens, Nortel, Alcatel and Avaya have an established presence. Cisco leads share of mind as it has gained a strong position in this market over the past few years. It appeals to enterprises due to its financial stability and is highly likely to already have business relationships with many of the enterprises surveyed<sup>21</sup>. However, the vendor share of mind does not translate necessarily into actual market share [Exhibit 5].

### 3.4. Competition

The concentration in the enterprise communication industry is low. There has been little change in vendor position in the corporate telephony Magic Quadrant from 2008 with only Nortel & Microsoft having notable movements [Exhibit 6]. Nortel's fall in the execution was mainly due to drop in confidence after it filed for bankruptcy in January 2009. However, Avaya's acquisition of Nortel should return a measure of certainty to Nortel's customers in a market that continues to be in transition. Microsoft significantly improved its ability to execute with the launch of Microsoft Office Communications Server (OCS) 2007 r.2, and strong

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<sup>21</sup> (Eastwood, 2008)

campaigns to encourage organizations to try and implement the platform. The continuous improvement in the product features makes it a strong complement to the IP-PBX for collaborative workers. Microsoft has been gaining increased momentum in topics of discussion where organizations wanting to explore UC are looking for software based voice over IP solutions<sup>22</sup>.

The four major players in this business are Cisco, Avaya, Nortel & Alcatel-Lucent. Other players who can transform the way the industry is viewed are Microsoft & IBM.

Alcatel-Lucent presents a strong portfolio for telephony and migration to UC. It is an obvious shortlist selection for pan-European organizations, and through channel partner relationships can address the needs of international organizations. While it has a strong mind share regionally, despite extra investment in a direct-sales presence in North America, Alcatel-Lucent is faced with creating brand recognition that challenges the incumbents of Avaya, Nortel and Cisco for new business. Alcatel-Lucent is not heavily promoting the benefits of its UC portfolio and hence it is at risk of losing telephony market share to Microsoft and IBM collaboration portfolios<sup>21</sup>.

Avaya is a global leader for telephony and has a strong portfolio of voice solutions. They were heavily criticized for premium pricing and conflicting channel programs which they have now addressed. Since mid-2008, Avaya has introduced pricing and bundling initiatives that reduced prices for many products and services, as well as simplified the pricing structure, thus silencing critics. Avaya's shift to a high-touch, indirect model in all markets is positive. The Service Delivery Specialization (SDS) program, launched in early 2009, is also a positive step, enabling channel partners to demonstrate advanced expertise in implementation, maintenance support and integration services<sup>21</sup>.

Nortel has a strong global installed base of telephony and its committed set of channel partners will continue to support the installed base. However, its weakened financial position early this

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<sup>22</sup> (Blood S, 2009)

year weakened confidence with enterprise buyers, and therefore reduced investments by customers. Post acquisition, depending on how Avaya drives the Nortel technology, Nortel's strong international footprint of telephony and contact center, and the communications portfolio has sufficient value to see continued development and support through the next three to five years<sup>21</sup>.

Microsoft is a leading player in the UC market, and customers are finding the voice functionality good enough to displace some desk phones, and to integrate with mobile devices<sup>21</sup>. Microsoft has a significant mindshare because of OCS and proven capability in UC through its partnerships with few of the top 4 players. Therefore it will not be difficult to translate this mindshare into preference for software enterprise communications solutions Microsoft has in the pipeline.

Similar to Microsoft, IBM has a comprehensive offering in the desktop collaboration market. In comparison to Microsoft, IBM does not have plans to develop its own IP telephony platform. Its end-to-end solution strategy depends heavily on its part eco-system where IBM supports other players to complement its offers.

Cisco has the largest mindshare in convergence technology [Exhibit 7]. This is because Cisco has gained a strong leadership position globally, whereas the other vendors tend to have had more success in national rather than global markets. Recent mergers have hindered the success and growth of some of the other vendors. In particular, the merger of Alcatel-Lucent in 2006 which has led to financial troubles has hindered its growth. Siemens has also been undergoing changes and the Siemens Enterprise Communications (SEC) division is currently being run as a separate company. Nortel's acquisition by Avaya has yet to prove its success<sup>23</sup>.

### **3.4.1. Competitors Strategy**

Avaya, the next best to Cisco, had a chaotic channel strategy with some countries having only one channel partner, others with multiple partners and in countries like US, Avaya had a direct

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<sup>23</sup> (Eastwood, 2008)

presence along with other channel partners. Avaya has revamped its channel strategy through Avaya Connect. Avaya Connect represents a major overhaul of the company's existing channel programs into a globally consistent framework that streamlines processes, pricing, training and certification requirements while enabling channel partners to serve customers better. Avaya Connect is scheduled to be globally operational on February 1, 2010. The company says a new global channel program will be announced in EMEA and APAC regions during their respective partner conferences in the coming months<sup>24</sup>. This will help Avaya connect with local businesses and have a greater touch with their customers. In addition, Avaya has decided to adopt a strategy to aggressively target the small and medium enterprises for its contact center portfolio through a revamp of the following three categories – channel, sales & product portfolio<sup>25</sup>.

Alcatel-Lucent's strategy to streamline its operations, focus on IP, optical, mobile, and fixed broadband, and applications enablement is a sound one and aligns with operators' direction. Operators are focused on growing revenue-generating services, migrating to flat IP architecture and offloading the maintenance of legacy networks to Original Equipment Manufacturers' (OEMs') managed services<sup>26</sup>. Part of the Alcatel-Lucent's new strategy, is an imperative to partner with other companies in three distinct ways: to gain credibility and presence in the enterprise IT space, to manage legacy products and to benefit from the pioneering work of new startups. Meanwhile, Alcatel-Lucent also plans to partner with others for the legacy end of its business as well, to reduce costs there. That effort, which the CEO called "co-sourcing," would exclude startups in favor of companies that have a size and scale more commensurate with Alcatel-Lucent's massive global base<sup>27</sup>. After a not so smooth Alcatel-Lucent venture in 2006, CEO Ben Verwaayen has claimed that Alcatel-Lucent would not take the M&A growth route and would instead push for organic growth by developing their own resources and capabilities.

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<sup>24</sup> (Corner, 2009)

<sup>25</sup> (Market Watch: Global Round-up, 2008)

<sup>26</sup> (Analyst Blog | ABI Research, 2008)

<sup>27</sup> (Gubbins, 2009)

### 3.5. Cisco Strategy

#### 3.5.1. Company Strategy

As a contrast to Alcatel-Lucent, Cisco has used its cash reserves to make a number of acquisitions intended to support and expand its vision, including IP communications technology provider Metreos, Voice XML provider Audium, and software as a service (SaaS) provider WebEx. Cisco's earlier acquisitions were large in number and those acquired were niche players who Cisco absorbed leaving no trace of the original company. Buying innovative small firms rather than developing new technology from scratch has long helped Cisco stay in front of the pack with a fresh stream of new products, while largely sidestepping the merger messes that Cisco's competitors have faced. This has been Cisco's strategy in order to build its capability platform. In this attempt, Cisco has acquired up to 126 companies since its first acquisition in 1993, most of them small, privately held and closely related to its networking-equipment business.

But in the past five years, while spending about \$2.5 billion on 44 companies in its core business, Cisco has spent more than four times as much, about \$11 billion – on a handful of new-style acquisitions that it calls “platform” deals. Cisco now plans to take at least 18 months to integrate the acquired company with Cisco, especially since these are un-familiar businesses. Cisco is now following a strict guideline for buying companies by targeting small businesses that establish early market leadership but are inexperienced in getting their wares to customers. Cisco used the same hands-off method when it bought set-top box manufacturer Scientific-Atlanta Inc. in 2006 for \$6.9 billion which contributed \$2.76 billion, or about 8%, to Cisco's 2007 revenue of \$34.9 billion. Last year, Cisco acquired a 2,200-person online conferencing start-up, WebEx Communications Inc., for \$3.2 billion. Cisco allowed WebEx to keep its Santa Clara, Calif., headquarters and left in place WebEx's sales team<sup>28</sup>.

With the intent to strengthen its global position, Cisco opened the second of 6 global headquarters in India in 2006. This is a part of Cisco's globalization strategy. Cisco's chief globalization officer, Wim Elfrink believes that globalization is the biggest market transition now and it gives Cisco an opportunity to transform itself into a new organization that is built

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<sup>28</sup> (Vara, 2008)

on speed and scale. Cisco is doing this by creating new business models and solutions to meet new customer needs, using technology to globalize the operations and by establishing new global ecosystems<sup>29</sup>.

In line with this strategy, Cisco has reorganized its field sales structure as of the beginning of their fiscal year, starting on August 1, 2009. The reorganization is intended to create a next-generation sales experience that is seamless, global and brings the full collective power of Cisco to their customers, partners and worldwide field teams. Ultimately, the reorganization aims to simplify, prioritize and make it easier to do business with Cisco for their customers and partners<sup>30</sup>. This comes in wake of the contrasting strategy being adopted by Avaya where they are focusing on building consistent channel relationships.

Cisco is also preparing to adopt a new management model based on Councils & Boards that collaborate to set long term direction for Cisco's business strategies. This strategy aims to bring agility in decision making especially as Cisco targets emerging markets like India & China and industries like healthcare, sports, entertainment etc.

Thus, while Cisco is changing its operating strategy, with the recent acquisition of Zeta Building Intelligence and alliances with Dell, EMC, Accenture & Fujitsu, Cisco is still heavily relying on strategic alliances and M&A for its growth.

### **3.5.2. Business Strategy**

In the unified communication space, Cisco integrates with Microsoft & IBM rather than competes. However, as Microsoft enters into IP telephony, it will be an inherent competition to Cisco. Therefore, Cisco is positioning some of its UC features to non-Microsoft consumers to avoid early confrontation and to gain significant lead in this category. In the telephony segment, Cisco's strategy has always been to leverage its existing data installations to extend IP telephony, thus providing the customer a one-stop-shop. The entry in IP telephony becomes

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<sup>29</sup> (Elfrink, 2009)

<sup>30</sup> (Cisco Plans to Revamp Sales Strategy, 2009)



easier at existing customer locations due to a relationship & trust that has already been built. Cisco has succeeded in this attempt and has sold close to 3 million IP phones.

Cisco's strategy of targeting all segments of the market with clear product bundles is paying dividends, particularly in regards to vendor recognition. It is worth noting that Cisco is held in high regard by enterprises for its solution and go-to-market strategy.

While Cisco Capital is in existence since more than a decade, Cisco has started providing 0% financing to customers interested in Cisco's UC and Telepresence solutions. This is designed to improve the affordability of Cisco's Unified Communication & telepresence solutions, which is one of the causes of these solutions yet not being number one priority of IT managers. Networking giant Cisco has extended its 0% financing offer in Europe to all products and solutions and has also doubled the maximum deal size. The Cisco CapitalSM EasyLease now covers deals worth up to US\$380,000 until the end of July 2010. Cisco reckons that its financing is a powerful tool for resellers and partners to use to drive business within Europe<sup>31</sup>.

Cisco's strategy in 2009 was centered on the increasing role of intelligent networks, collaboration and Web 2.0 technologies, the United States and selected emerging countries, the network as the platform, and resource management and realignment. This strategy was adopted in part due to their experience in facing previous economic downturns and wanting to use this downturn as an opportunity to expand their share of customers' IT spending. The strategy would also help Cisco to continue moving into product markets similar, related, or adjacent to those in which they currently are active, which they refer to as market adjacencies. They have expanded movement into market adjacencies mainly through realignment of resources, while simultaneously reducing aggregate expenses. Cisco is also focusing its attention on the increased role of video, collaboration, and networked Web 2.0 technologies across customer markets. The key market transitions relative to the convergence of video, collaboration, and networked Web 2.0 technologies, that drive productivity and growth in network loads, appear to be evolving very fast. Cisco TelePresence systems is one example of

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<sup>31</sup> (Wilson, 2009)

Cisco's product offerings that has incorporated video, collaboration, and networked Web 2.0 technologies, as customers evolve their communications and business models.

Early this month Cisco launched a number of products that speak to the strategy defined in 2009 especially with the Cisco WebEx Mail hosted e-mail and enterprise social networking tools, including Enterprise Collaboration Platform, Show and Share and Pulse<sup>32</sup>. New Cisco TelePresence, Cisco Unified Communications, and Cisco WebEx solutions raise the bar for inter-company collaboration by delivering rich video, voice, and presence capabilities across and between organizations.

Thus, Cisco's service and support strategy seeks to capitalize on increased globalization<sup>33</sup>. As Senior VP & General Manager at Cisco puts it, "There are a few key trends that are creating a need for organizations to change the way they operate: globalization, consumerization of IT, information overload, and increased worker mobility. Cisco's collaboration strategy and portfolio is designed specifically to enable this new way of working<sup>34</sup>."

### 3.5.3. Strategy Analysis

Cisco has used the adaptation strategy and has adapted its solutions to a large extent to the business needs of regions in which it operates. This stems from the fact that Cisco has set up headquarters in emerging countries and also hires locally in these countries in order to adapt to local needs. However, in addition to this, Cisco also participates in cross-border teams and sends management teams to work in these regional headquarters, thus ensuring diversity even at the top management in each of these headquarters.

This section analyses Cisco's strategy & its business strategy using the ADDING value scorecard.

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<sup>32</sup> (Boulton, 2009)

<sup>33</sup> (PWC, 2009)

<sup>34</sup> (NewsEdge, 2009)

### Adding Volume or Growth

A significant amount of Cisco's growth has been inorganic. The growth through acquisition strategy has been used to increase its product portfolio as well as increase its presence in different countries. The following table presents the gross margin for each region (in millions, except percentages).

	AMOUNT				PERCENTAGE			
<u>Years Ended</u>	<u>25-Jul-09</u>	<u>26-Jul-08</u>	<u>28-Jul-07</u>	<u>29-Jul-06</u>	<u>25-Jul-09</u>	<u>26-Jul-08</u>	<u>28-Jul-07</u>	<u>29-Jul-06</u>
United States and Canada	\$12,685	\$13,882	\$12,437	\$10,234	65.60%	65.40%	64.40%	64.80%
European Markets	5,098	5,321	4,817	4057	66.40%	65.50%	65.20%	66.70%
Emerging Markets	2,428	2,790	2,030	1682	60.70%	61.60%	62.70%	67.90%
Asia Pacific	2,302	2,771	2,353	1861	61.90%	64.80%	64.40%	65.20%
Japan	973	963	921	913	70.90%	70.30%	69.40%	70.70%
<b>Total</b>	<b>\$23,486</b>	<b>\$25,727</b>	<b>\$22,558</b>	<b>\$18,747</b>	<b>65.00%</b>	<b>65.10%</b>	<b>64.60%</b>	<b>65.80%</b>

The table shows that there has been an increase in margins from 2007 to 2009. However, economic downturn, called for higher sales discount and rebates, lower product pricing across geographies and lower shipment volume. The mix of products sold also contributed to the decrease in the product gross margin percentage. However, this decrease in price was offset by decrease in cost due to lower manufacturing costs. Cisco benefited from cost savings in component costs and value engineering and other manufacturing-related costs. Thus, an increase in volume due to acquisitions and geographic spread is also resulting in an increased gross margin.

An increase in smaller competitions in Asia, especially China has affected the gross margins in the Asia Pacific region.

### Decreasing Costs

Acquisitions broadens Cisco's portfolio. Most acquisitions done by Cisco are those products that Cisco does not have capabilities and resources in and which are difficult to acquire. For example, Cisco's recent acquisition of Tandberg has helped Cisco increase its video portfolio with products that are cheaper in price and match Cisco's quality. While Cisco does have

Telepresence in its portfolio, acquiring Tandberg has helped Cisco build a range of products that customers could choose from. Cisco's large installation base would certainly act in favor of Tandberg and would give them a foot-in-the-door in countries and customer locations where they are currently not present. This acquisition was made during tough economic times allowing Cisco to get a better deal although they paid a 11% premium to Tandberg's closing price on 30<sup>th</sup> September, 2009<sup>35</sup>. This seems positive assuming that video conferencing will be the savior for most organizations as companies become more stringent on their travelling expenses going forward. Cisco, by acquiring Tandberg has reduced any R&D, manufacturing & labor related costs associated with developing their own capabilities & resources in this area. In addition, lower manufacturing costs and cost savings in component costs and value engineering have also helped Cisco reduce costs.

Cisco's globalization strategy included cloning their headquarters in BRIC countries and other emerging countries where they see greater growth as against stagnant growth in Western countries. This meant replicating their sales, marketing, R&D, production & HR locally. The idea behind this step was to serve local markets with products designed to suit local conditions and buying habits. The Bangalore headquarter in addition to being a cost cutting strategy was also a strategic move because most of the future growth is in Asia, skilled labor is easily available in India, lack of legacy infrastructure provided huge opportunity and Bangalore is within 5 hours flying distance to 70% of world's population<sup>36</sup>. This has helped Cisco financially during the economic crisis.

### **Differentiating or increasing willing-to-pay**

With more companies opening offices internationally, in an IP telephone scenario, there is a need for the service provider to be present in these locations especially for maintenance & service purposes. Cisco's presence in data networks allows it to provide an end-to-end solution to the customers. In addition, a wide geographic presence acts as an added advantage for customers in terms of service reliability in regions where client offices are located. With a

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<sup>35</sup> (Vance, 2009)

<sup>36</sup> (Maresca, 2009)

strong cash balance, Cisco is able to strengthen its financial offering through Cisco Capital with its own money, representing more financing opportunities for its channels. This certainly increases customer's willingness to pay.

In 2009, Cisco's R&D as a percentage of net sales is 14.4% and sales & marketing as a percentage of net sales is 23.3%<sup>37</sup>. This indicates that the industry Cisco is in is a multinational industry.

However, many organizations will find that Cisco Unified Workspace Licensing (CUWL) increases the cost of ownership, especially for those organizations that have yet to define a road map for UC, a partner strategy and to carry out user profiling to identify the value of each package. The addition of Entry Edition extends the choice for CUWL, but organizations would insist that channel partners provide proposals for a la carte licensing to make a direct comparison of cost of ownership.

### **Improving industry attractiveness or bargaining power**

Most of Cisco's acquisition strategy involves acquiring niche businesses which are not necessarily leaders in their segment. Thus, by acquiring them, integrating the new product with Cisco's product offerings and broadening the product portfolio, helps Cisco with providing a solution for every enterprise need. Cisco is moving towards an age where every equipment at the customer's site is provided by Cisco. Thus, by incorporating these solutions in silo with their existing installation exposes customers to more advancement in technology at cheaper costs, thus increasing industry attractiveness.

While Cisco does a very good job of moving into market adjacencies, that does not mean that it knows it all. For example, Cisco is highly vulnerable to failure with their current collaboration strategy. While Cisco thinks they know the border of the industry, they really do not because the borders are not clearly defined. In order to succeed Cisco needs to understand the nuances

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<sup>37</sup> (PWC, 2009)

of every segment in collaboration. Thus, while it probably is increasing industry attractiveness through these adjacencies, it is not having a very high bargaining power today.

### **Normalizing risk**

The geographic spread & the acquisition strategy expose Cisco to significant risk. These risks can be associated to their ability to successfully acquire businesses and technologies and to successfully integrate and operate these acquired businesses and technologies; increased competition in the product and service markets locally; dependence on the introduction and market acceptance of new product offerings and standards; rapid technological and market change; and manufacturing and sourcing risks.

However, by opening up its 6 cloned headquarters in emerging countries, Cisco is now closer to its customers. Cisco's decisions locally are significantly dependent on each regions need. By being closer to its customers, Cisco can act promptly on those needs and thus create greater value for itself and the customer. In addition, being closer to the customer would allow Cisco to make informed technology decisions based on need, thus normalizing a large chunk of the risk.

### **Generating knowledge**

Cisco understands the need to think global and act local. As a part of the globalization strategy they decided to open headquarters in emerging countries. In order to become a truly global company, Cisco is moving from a "command and control" approach to one based on collaboration and teamwork. Cisco is developing councils, boards and collaboration processes to further cross-company functions and this is being done by decentralizing the top 20% of management to different countries and businesses<sup>38</sup>.

This strategy has helped Cisco transfer knowledge from the top management to areas that need it most. It also helps the management understand local needs to create solutions and base important company decisions. Thus Cisco has aimed to generate knowledge through such decentralization of management and is working towards its goal.

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<sup>38</sup> (Elfrink, 2009)

#### 4. RECOMMENDATION

Cisco is at a stage of building a conglomerate within the technology industry. This stems from the fact that they are into almost every business in technology and are either a market leader or a close second or third in each. While this strategy has so far worked for Cisco, Cisco needs to take caution in the decision it makes.

Although Cisco's emphasis on shifting to value selling is positive, its success lies in partnering with major consulting providers, such as Accenture, to develop approaches to communications-enabled business processes. Since these processes are at an early adopter phase in the market, budget cuts this year will demand a more tactical cost-cutting approach, which will hamper the success of the consultative approach. Thus while Cisco should not deviate its focus on value selling through consultative approach, they must have a back-up marketing plan to sell the solutions in case the consultative approach falls through.

Cisco's marketing strategy has placed too much emphasis on its telepresence and video solutions. In an economic slowdown enterprises are unlikely to invest heavily in a telepresence solution. Cisco may be better served if it realigns its focus to WebEx, desktop and collaborative software solutions, especially now after its acquisition of Tandberg.

As Cisco jumps into the collaborative bandwagon, Cisco needs to understand firstly that it is going head-on against Microsoft & IBM. Cisco also needs to understand the value network of these two competitors. Developers have been an integral part of IBM's and Microsoft's success in the collaboration market. Collaborative applications provide tremendous business value. Cisco need to define what program it will put in place to attract developers and build a community around that program. Cisco also needs to consider what developer environments it intends to support.

Currently Cisco is rowing two boats with their direct sales strategy while retaining its partner ecosystem. A thriving partner and third-party ecosystem is a critical success factor for Cisco as it attempts to become a collaboration market leader. However, Cisco should identify and

promote the suitable business model and related services to expand Cisco's platform and solutions into a sustainable ecosystem.

Cisco believes that its participation in content management, search and portal is only to boost its collaboration efforts. However, because Cisco has not clearly articulated this to its customers, their customers may consider this as a given and may pull Cisco in directions it did not desire to invest in or compete. Thus, Cisco should articulate this very clearly so that it proves that it is on parity with its competitors like Microsoft & IBM in these aspects, while clearly stating that content management, search and portal are not Cisco's core competencies.

## 5. CONTINGENCY PLAN & CONCLUSION

Competitors may focus on their offerings of telepresence equivalents if Cisco reduces its focus on it. Cisco can then restate its focus on TelePresence though not as a standalone product but as part of its video telephony suite.

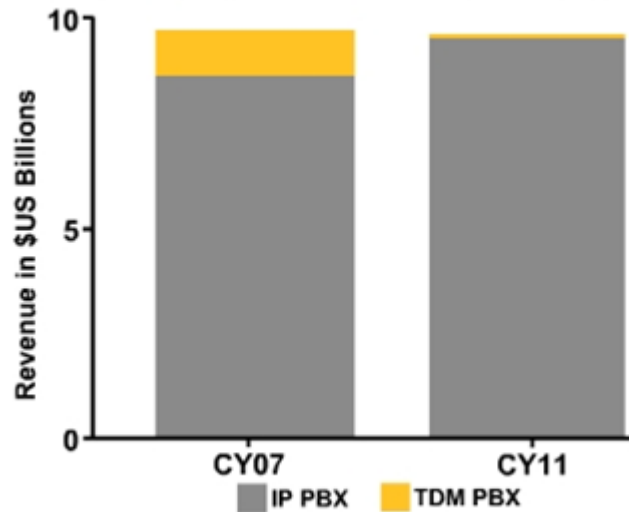
If Cisco puts up a program to attract developers and fails to accrue enough interest, it can leverage its partnership with Red Hat and their source of developers to build this program in conjunction with Red Hat. This will not only give Cisco a helping hand on dealing with the world of open developers but also give Cisco's attempt some credibility. Cisco's participation in collaboration has been a defensive act to protect its Unified communication turf in case Microsoft & IBM plan to enter. Both these competitors could use Cisco's articulation of its content management strategy against Cisco to prove its worth. In such a scenario, Cisco needs to play on the fact that collaboration is a part of the holistic solution Cisco offers to the customer from data network to the end collaboration. Also, because the collaboration is built on open source technology, it gives customers the benefit to choose their content management partner which in the large scheme of things seems less important.

In conclusion, Cisco has a strong growing presence in the enterprise communications market with its strategic acquisitions and business strategy. Cisco needs to play the game with caution being aware of competitive happenings around.



## EXHIBIT 1

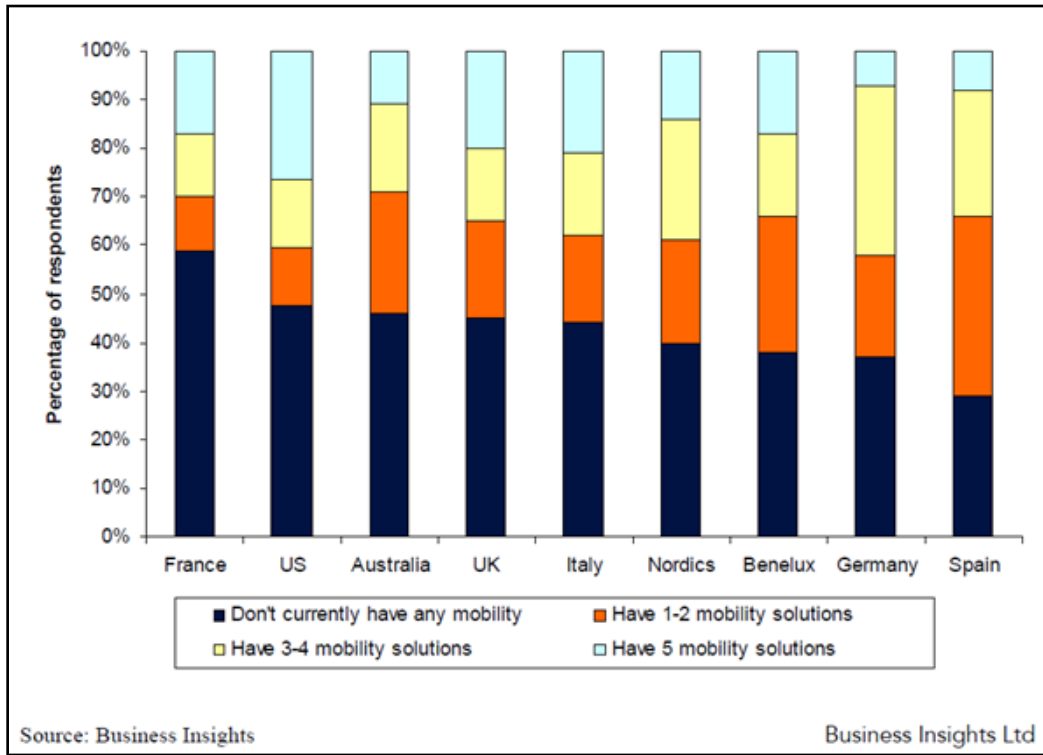
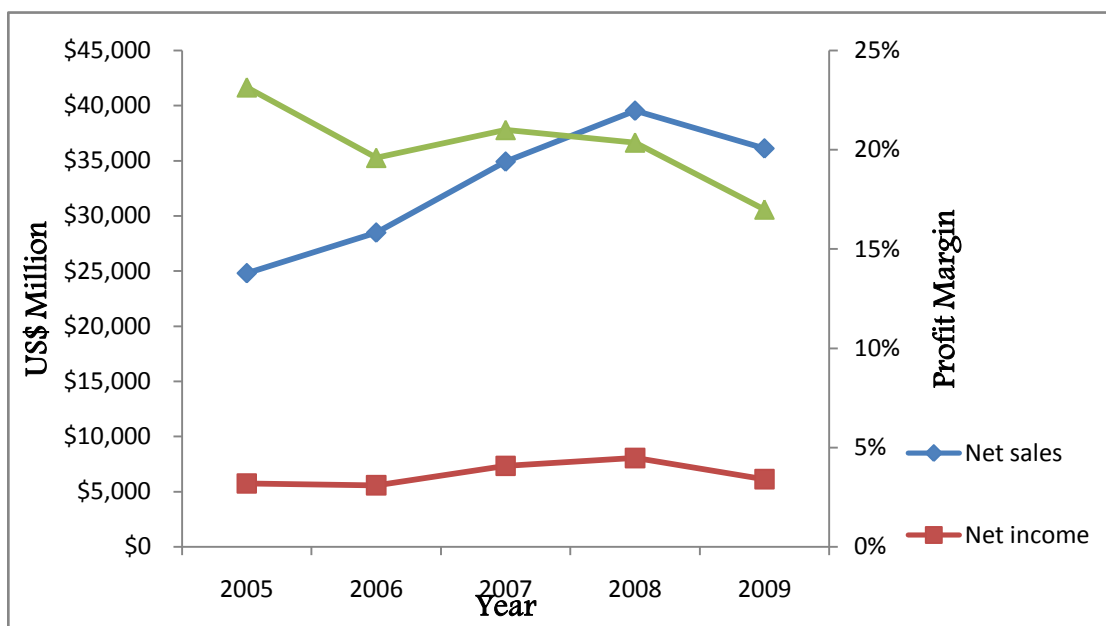
IP and TDM PBX Worldwide Revenue Forecast

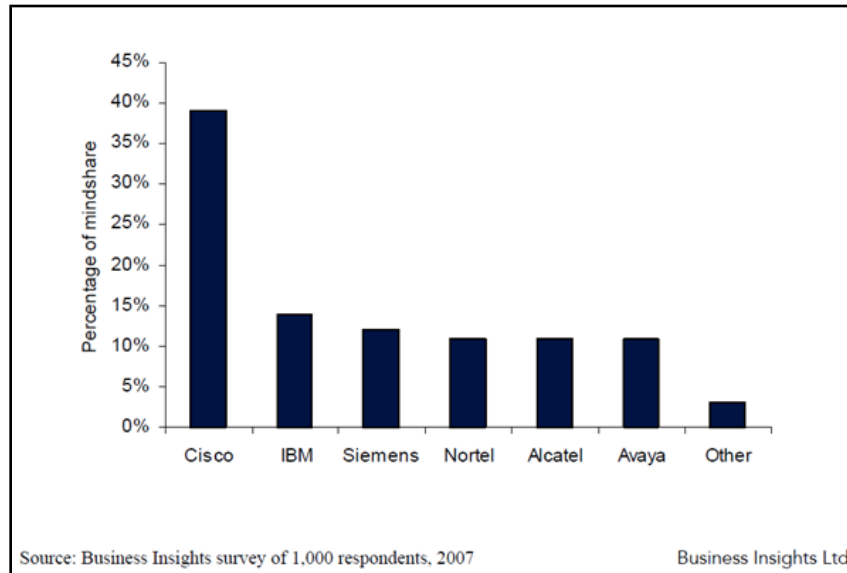


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Quarterly Worldwide Market Share and Forecasts 3Q08

## EXHIBIT 2

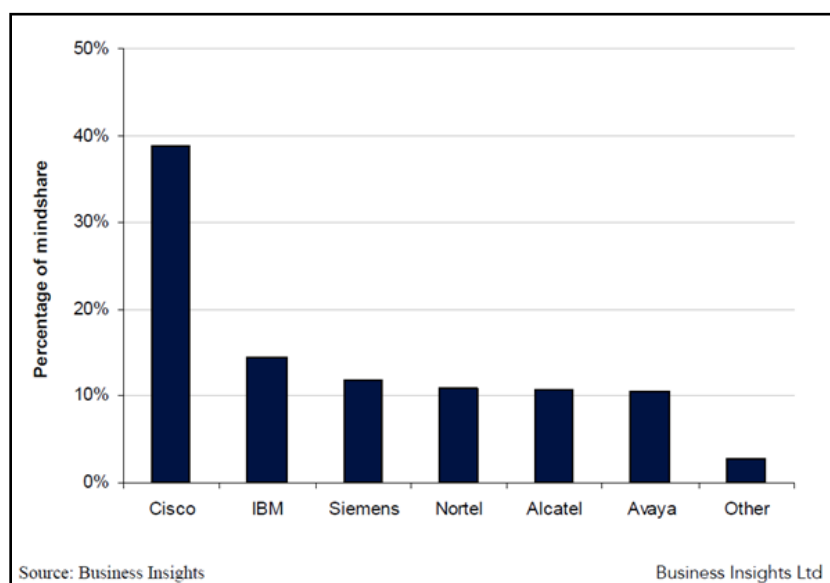
Unified communications market opportunity by geography, 2008-2013 (\$m)							
Country	2008	2009	2010	2011	2012	2013	CAGR
Australia	332	389	452	526	6.4	685	16.1%
Austria	151	172	194	219	244	270	12.8%
Benelux	367	410	455	503	551	600	10.7%
Brazil	224	261	302	349	399	451	15.6%
Canada	529	602	681	768	857	948	12.9%
China	744	890	1,058	1,259	1,479	1,717	18.7%
Denmark	133	150	168	188	209	230	12.1%
Finland	114	133	154	178	203	229	15.5%
France	975	1,063	1,153	1,247	1,337	1,425	8.3%
Germany	1,230	1,351	1,475	1,606	1,733	1,859	9.0%
India	507	598	702	825	955	1,094	17.2%
Ireland	112	125	138	152	165	179	10.3%
Italy	559	638	724	821	919	1,019	13.3%
Japan	2,341	2,568	2,799	3,044	3,281	3,514	8.9%
MEA	679	814	972	1,162	1,369	1,594	19.2%
Norway	142	163	187	214	241	270	14.3%
Portugal	77	89	102	117	132	148	14.5%
Rest of Asia Pacific	584	697	825	979	1,147	1,326	18.3%
Rest of CALA	637	760	901	1,070	1,254	1,453	18.5%
Rest of Europe	681	785	900	1,030	1,164	1,304	14.4%
Russia	582	681	792	921	1,057	1,199	16.1%
South Africa	169	199	231	270	311	354	16.5%
South Korea	416	499	595	711	838	974	19.1%
Spain	553	639	733	840	952	1,067	14.5%
Sweden	186	214	245	280	316	353	14.2%
Switzerland	156	178	202	228	254	281	13.0%
Taiwan	181	216	256	305	357	412	18.4%
UK	1,198	1,315	1,435	1,562	1,685	1,806	9.0%
US	6,989	7,678	8,380	9,124	9,845	10,555	9.0%
<b>Total</b>	<b>21,548</b>	<b>24,277</b>	<b>27,208</b>	<b>30,496</b>	<b>33,858</b>	<b>37,319</b>	<b>12.0%</b>
Source: Business Insights				Business Insights Ltd			

**EXHIBIT 3****Mobile technology penetration by geography****EXHIBIT 4****Cisco's Revenue Growth**

**EXHIBIT 5****Unified Communication: Vendor share of mind<sup>39</sup>****EXHIBIT 6****Magic Quadrant**

Source: Gartner (August 2009)

<sup>39</sup> (Enterprise Communication Market Outlook, 2008)

**EXHIBIT 7****Voice/Data Convergence vendor share of mind<sup>40</sup>**

<sup>40</sup> (Enterprise Communication Market Outlook, 2008)

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