The Role of a Chief Information Officer (CIO):

**Executive Summary**

*General Responsibilities and Role of a CIO*
The CIO of a company is in charge of the IT department and has a wide range of responsibilities. Some common examples include: aligning IT initiatives with business strategies, assessing and acquiring new technologies, managing IT risks & controls and ensuring compliance with government regulations.

*Impact of Announcing a New CIO on Shareholder Wealth*
Many research studies have shown a positive impact on share price occurring for firms making an announcement regarding newly created CIO positions. Shareholders interpret this announcement as a change in the mindset of senior management to become more focused on IT strategies of a company to achieve its business objectives. As a result, the company will realize lower costs, more profit and better quality for products.

*How do different reporting structures affect the CIO role*
The reporting structure in a company greatly affects the focus and responsibility of a CIO. Research has indicated that companies where CIOs report directly to the CEO realize more profitability as the CIO tends to be more business focused in their responsibilities. On the other hand, reporting directly to the CFO hinders the CIO’s ability to be involved in the operations of the company and thus lowers the impact of IT on the company’s productivity and profitability.

*A Solution to the Overwhelming Responsibilities of a CIO, The CTO Role*
As a result from the overwhelming responsibilities and stress that a CIO faces, a new position called the Chief Technology Officer has been created in order to alleviate some of the pressure. The CTO of a company will be more focused on the technical aspects of IT, so that the CIO can focus more on his/her primary objective of aligning IT initiatives with business strategies.
Introduction and Overview:

The business world continues to change at a drastic pace with new technologies and new regulations. The demands on C-suite Executives continue to grow in light of this. This paper in particular will be examining the role and responsibility of a Chief Information Officer (CIO) and how reporting structures and regulation changes affect it. It will also discuss not only the role of a CIO, but also what the main priorities are of a successful CIO in the ever changing business and IT world today. The topics covered in the paper are listed below:

- General Responsibilities and Role of a CIO
- Impact of Announcing a New CIO on Shareholder Wealth
- How do different reporting structures affect the CIO role
  - CEO-CIO Relationships
  - CFO-CIO Relationships
- Summary of Analysis
- A Solution to the Overwhelming Responsibilities of a CIO, The CTO Role

The Primary Role and Responsibilities of a CIO:

The CIO is the head of the information technology group within an organization. However, with the changing business environment today, CIOs are expected to take on a much broader role with many different responsibilities. In the book The New CIO Leader, Broadbent explains that in order to be an irreplaceable asset to their organization, CIOs must embrace a new role to lead their companies into achieving competitive advantages. In her book, Broadbent mentions some of the critical priorities and responsibilities expected of a CIO to help achieve this goal, which are summarized below. (Broadbent 12-14)
• Understanding the environment to help the company adapt business processes in order to quickly respond to market place transitions.

• Developing and training a competent team of IS staff to support and improve internal/external organizational relationships.

• Knowing and communicating how IT is contributing to shareholder value and any IT indicators required in making business relevant decisions.

• Ensuring effective and clear IT Governance to build credibility and trust inside the organization.

• Assessing and acquiring new technologies to align IT strategies with business needs, making better use of information and improving innovation.

• Helping to manage IT and business risks related to information security, data privacy, and the need to comply with government regulations.

From the broad list of responsibilities above, we can see that the CIO role can be overwhelming and often unclear, sometimes even to CIOs themselves. As different corporations have different strategies and needs, their view and reliance on IT vary as well. In an attempt to clarify the role a bit more, a recent 2006 survey of CIOs was performed by www.cioinsight.com, indicating that the three biggest business priorities of CIOs are¹:

• Aligning information technology with the needs of their business

• Improving business processes to react quickly to market change

• Making information more useful

¹ Alter, Allan E. [http://www.cioinsight.com/article2/0,1540,1963698,00.asp]
As such, we can see that many CIOs agree that their main objectives concern alignment of IT and business strategies. Holmes mentioned in his article “State of the CIO: The Changing CIO Role,” that the CIO in 2006 has become business-focused, with the three main top priorities as communicating with other business executives, making strategic business decisions and working on business planning. However, CIOs are still worried about the execution of IT. In fact, they see an overwhelming backlog of projects and requests as the number one obstacle to performing their jobs effectively. This problem has generated great concerns within corporations and thus a new position called a Chief Technology Officer (CTO) has been created in many firms as a solution. The CTO role will be discussed further at the end of the paper.

Impact of Introducing and Announcing a New CIO Role on Shareholder Wealth

As CIOs play an important part of an organization, shareholders have recognized the importance of this type of business leader as well. Guan, Sutton, Chang and Arnold (2006) performed a study that re-examined and confirmed the conclusion that newly created and announced CIO positions have a positive impact on shareholder wealth. Guan et al. observed that abnormal returns were experienced in share prices at the announcement date or a few days prior to the announcement by companies that announced a new CIO role. Thus, these increases in share price suggest that the shareholders in capital markets recognize the importance and value of having a CIO role in the company to further business strategies through IT. “Recent studies have shown that CIOs add value by building confidence in and strengthening relationships with other chief officers and by enhancing the strategic role of IT.” (Guan et al. 176)
This argument is further supported by another research study performed by Chatterjee et al. at Washington University. The research article confirms that positive movements in the market place are indeed experienced by firms which introduce newly created CIO roles. Companies have begun to realize the strategic importance of having a CIO to effectively manage their IT resources. The market place realizes that firms which control their IT capabilities can realize lower costs, improve quality of products and be more innovative. This in turn is creates more profitability for companies and is passed along to investors as increased returns on investment. Whether or not a company can take advantage of its IT capabilities depends on the quality of management skills and that is where the leadership of a CIO role becomes vital. The introduction of a CIO role means that these companies can now fully capitalize on many growth and competitive advantage opportunities through the effective use of IT systems. Shareholders also interpret the announcement as a change in the mindset of senior business executives regarding the importance and role of IT on the overall business performance and strategy. (Chatterjee et al. 45)

**The Effect of Different Reporting Structures on the CIO Role:**

The role of a CIO can often depend on many factors such as the type of company they work for and the specific IT needs of that company. Interestingly, their responsibilities and agendas can also vary depending on who they report to directly. Many companies have different reporting structures, where the CIO reports directly to the CEO in some and the CIO may also report to the CFO in others. A recent research study, done by Forrester Research Inc. on consumer goods manufacturers, has shown that there is a significant difference in terms of responsibilities and priorities in companies where the CIO reports to the CEO versus the CFO. In
an attempt to analyze the difference, my research will focus on the positive and negative aspects of these two reporting options.

*Reporting to the CEO:*

The survey found that CIOs, who report directly to the CEO, focused more on the business strategies and IT issues regarding the improvement of sales and growth in the company. This executive partnership usually helps the company grow their top line sales by allowing the CIO to use the company’s technology in order to gather and analyze relevant consumer data. As a result, the CEO can determine the right product mix to sell at individual retail stores and may also better manage the production supply of goods available. This ensures that the company will increase sales revenue by not over producing bad products, while never under supplying goods that are in demand and selling well. “CEO-CIO companies are 10% more likely to receive point-of-sale data on a regular basis from retailers than their CFO-CIO counterparts; 12% of CEO-CIO firms also receive market basket data…compared with the 2% of CFO-CIO firms.”

In his article “Report directly to the CEO to boost your IT goals and career,” Sisco mentions that “by reporting directly to the CEO or president, CIOs can spur achievements and gain invaluable insight and career help.” The article further explains that the CFO, in most companies, is more focused on the financial aspects of the business and is often less knowledgeable towards the inner operations of the company. Reporting to the CFO would hinder the CIO’s ability to be involved in the operations of the company and thus lowers the impact of IT on the company’s productivity and profitability.

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3 Tucci, Linda [http://searchcio.techtarget.com/originalContent/0,289142,sid19_gci1172753,00.html]
4 Sisco, Mike [http://articles.techrepublic.com.com/5100-6299_11-5030389.html]
Reporting to the CFO:

Sisco’s article also comments on the reasons why the CIO normally reports to the CFO within an organization. He explains that the CFO is normally responsible for the corporate services of the company including departments such as accounting, human resources and IT. In many instances these departments are very reliant on IT to keep them functioning, making it almost natural for the CIO to report to the CFO. This structure would also allow the CFO to monitor the controls of the organization. Many CEOs do not want the challenging responsibility of IT and are more than happy to let the CFOs monitor IT.

To add to the previous point of monitoring controls, CFOs are now required to sign off on internal controls and their compliance with SOX as a result of the Sarbanes-Oxley Act introduced in 2002. CIOs working under the CFO tend to be more focused on technology issues relating to SOX compliance and cost cutting, reflecting the main concerns of their superior. Instead of focusing more on business strategies and growth, the CIO would “assess and test technologies that support financial processes and improved control.” This indicates that CIOs would be performing more SOX related work, leaving not enough time for other important responsibilities.

In his article, Berghel supports this point of view by saying that “SOX impose[s] considerable responsibilities on the modern CIO.” As a result of SOX, CIOs are in charge of fraud detection systems, protecting against compromise in the control environment, performing routine IT security audits, and preventing IT activity which compromises shareholder equity. A great deal of

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5 Tucci, Linda [http://searchcio.techtarget.com/originalContent/0,289142,sid19_gci1172753,00.html]
financial reporting responsibility falls on the CIO and it will be increasingly harder for CIOs to face these growing challenges.

**Summary of Findings:**

When one examines the many overwhelming responsibilities expected by organizations, it is clear that the true role of a CIO can often be lost without a clear understanding of what the main objectives are. The analysis in this paper has found that these objectives along with the CIO role can vary depending on the reporting structures in various companies.

Although there is no single best company reporting structure for all cases, one may argue that the CIO-CEO partnership may add more shareholder value. The role of the CIO in this situation is focused to always think about how to improve existing technology or whether to acquire new applications that can be used to improve the current business models and strategies. As a result, the company usually recognizes stronger revenues and increases net income due to these improvements. The two studies on the impact of newly created CIO roles on shareholder wealth, which were performed by Guan et al. and Chatterjee et al., do not consider the different reporting structures. However, we can conclude that both studies point to a positive impact on shareholder value as the introduction of the CIO role reflects an improvement in IT capabilities, resulting in an improvement in business strategies. This proves that shareholders expect the CIO to be heavily involved in the business operations of the company. Also discussed above, CIOs themselves agree with this analysis, stating that aligning information technology with the needs of their business is the number one priority, according to the survey conducted by [www.cio.com](http://www.cio.com).

*(See Appendix 1)*
On the other hand, the CIO-CFO combination focuses on compliance aspects of a company that are very important and adds great value. However, it also unfortunately reduces the ability of the CIO to play a bigger role in improving the business processes of a company through IT due to a bigger time commitment to regulatory compliance. Thus, it can essentially be seen as diverting the CIO’s attention and time from performing his/her main role and responsibilities in the company.

From the above analysis, it can be concluded that CIOs are often bogged down by requests and projects which prevent them from focusing on the business priorities of the company. Under the CFO-CIO relationship, the compliance requests with SOX can also be seen that way. Often times, the role of the CIO gets lost within responsibilities which are too broad. Organizations must recognize this concern and address it accordingly so that IT strategies can aid business processes instead of being used ineffectively. The shareholders and CIOs themselves have come to an overall consensus that the primary role of CIO should be the alignment of IT with strategic business planning in order to gain competitive advantages. This will in turn maximize revenues and shareholder value for the company, providing the best usage of the CIO role.

**A Solution to the Overwhelming Responsibilities of a CIO, The CTO Role**

As the CIO role as expanded and changed over time, a separate new position has emerged in many corporations called the Chief Technology Officer (CTO). However, confusion still exists as to the difference between these two positions. In addition to the CIO role, I feel that it is important to explain how and why the CTO role emerged in order to further define what a CIO should be responsible for in an organization.
As I have mentioned above, the traditional role of the CIO has expanded to cover the responsibility of managing IT investments to align them with business strategies. However, with stronger emphasis on business activities in the company, the CIO’s position has become more stressful as less time is available to deal with more technical issues. As such, the role of the CIO has become so overwhelmed with responsibilities that a separate CTO position emerged, providing a response to this problem. According to the article “Defining the complementary job roles of the CTO and CIO” by Klinowski, the CTO is the “the right hand of the CIO, [providing] the company with an executive-level subject matter expert on the issues surrounding the technologies that the CIO must employ in order to achieve the company’s strategic objectives.”

Essentially, a CTO position is developed within a company, equipped with a strong technological background, to support the CIO’s commitment to more business related issues. In order to meet the company’s strategic objectives, IT initiatives will now require the co-operation and joint efforts between both roles.

**Conclusion**

The traditional role of the CIO has been moving towards a stronger focus on business strategies. However, the focus and responsibilities of a CIO vary depending on whether the CIO reports to the CEO or CFO. CIOs who report directly to the CFO often accumulate an overwhelming amount of responsibilities due to the introduction of SOX in 2002. This has become a big problem as the stress from the position may impair the CIO’s ability to achieve business objectives. As a result, a new position called the CTO has emerged to deal with this issue. The CTO serves as the right hand of the CIO and will support the CIO’s initiatives by focusing on the

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technical aspects of IT, so that the CIO can focus more on the business side. With the
combination of the two positions, a company can ensure that their IT initiatives are properly
managed to achieve business strategies and gain a competitive advantage.

Appendix 1:

| 4.1 As CIO of your company, what are your top three business priorities for 2006? |
|---------------------------------|----------|----------|----------|----------|----------|
|                                 | total 2006 | total 2005 | total 2004 | less than $500 million | $500 - $999 million | $1 billion or more |
| Aligning IT with the needs of the business | 53% | 59% | 57% | 51% | 54% | 54% |
| Improving our business processes so our company can react more quickly and flexibly to changes in the market | 48 | 49 | 46 | 40 | 46 | 52 |
| Making better use of information | 36 | N/A | N/A | 37 | 38 | 27 |
| Reducing the cost of doing business | 34 | 33 | 43 | 32 | 32 | 42 |
| Ensuring security and business continuity | 32 | 38 | 45 | 30 | 31 | 37 |
| Developing strategies that leverage new technology | 24 | 33 | 37 | 26 | 33 | 21 |
| Improving customer service | 21 | 24 | 18 | 21 | 24 | 13 |
| Helping our company to become more innovative | 17 | 16 | N/A | 14 | 21 | 10 |
| Improving the quality of our company’s products and services | 16 | 18 | 27 | 21 | 15 | 8 |
| Helping to launch new products and services | 14 | 16 | 16 | 14 | 14 | 17 |
| Selling and operating globally | 4 | 5 | 5 | 3 | 1 | 12 |

Source: [http://www.cioinsight.com/article2/0,1540,1963726,00.asp](http://www.cioinsight.com/article2/0,1540,1963726,00.asp)
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<td>CIO Role Survey April 2006: Achievement is the Issue, Not Survival</td>
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<td>CIOs are earning more and keeping positions longer for an average of 5.7 years due to the growing importance of IT, which defeated the stereotype that CIOs stand for &quot;Career is over,&quot; describing it's unusual short tenure. Along with the average tenure of a CIO, the survey also indicates the average salary and top business priorities of a CIO.</td>
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<td>The article indicates that with the new legislation of SOX in 2002, the CIO role has been altered because the primary concern is with SOX compliance and not technology risk management. This puts an abundance of pressure on the CIO to perform SOX related responsibilities to protect himself along with the CFO and CEO from violating the government regulations and possibly facing jail.</td>
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The role of the CIO stands at a cross roads as two perspectives on information technology exist. Thus, the CIO faces a decision of either to follow one of two paths. The first path is based on the belief that IT is irrelevant to competitive advantage and a role that is often called "Chief Technology Mechanic" due to its lack of input into the executive team. The second path is based on the belief that IT is in every business process and is crucial to business success. This second role is called a "New CIO Leader." The book further explains in detail what the New CIO leader is and what is expected from them in order to be successful.

This research study further confirms that the introduction of newly created CIO roles do in fact provoke positive market experiences for firms. The market place realizes that firms which control their IT capabilities can realize lowers costs, improve quality of products and be more innovative. This in turn creates more profitability for companies and is passed along to investors as increased returns on investment.
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Guan et al. observed that abnormal returns were experienced in share prices, at the announcement date or in a few days prior to the announcement, by companies that announced a new CIO role.

The article compares the role of a CIO with how it changed since the 2002.

The CIO in 2006 has become business focused, with the three main top priorities as communicating with other business executives, making strategic business decisions and working on business planning. However, CIOs are still worried about execution of IT. In fact they see an overwhelming backlog of projects and requests as the number one backlog in performing their jobs.

The article explains the difference between a role of a CIO and a CTO and how the CTO complements the CIO in an organization. The CTO role has a strong technical focus and is brought in so that the CIO can focus more on the business aspects of the business. The CTO is considered the right hand man of the CIO.
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