IT Organizational Topics

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Guy de Meester provides special insight into IT organization where getting the structure right is an ongoing exercise. First the successful must get the right people with the right technical and soft skills. Next the CIO must ensure the organization structure is closely aligned with the way the business is organized and operates. Then the CIO must establish special relationship with different business units. Finally the CIO must monitor key functions to ensure that strategic business processes are properly supported and keep executive management informed. The successful CIO will also need an external view to ensure IT organization manages outsourced activities too.

In this article, Mr. de Meester discusses:

- The importance of aligning the IT organization with the business plan;
- The types of organizational structures;
- Centralized versus decentralized controls;
- Establishing guidelines to centralize specific information services like helpdesk and desktop support, network and system administration, telecommunications support, applications support and database administration;
- The impact of policies and procedures on the organization;
- Internet support implications;
- The impact of in sourcing/out sourcing on organization;
- Metrics and management; and
- The impact of mergers and acquisitions on the organization.

Challenges Facing the CIO to Determine the Ideal IT Organization

Follow the Business Plan

Influence of Corporate Officers

It is generally accepted that IT should be in line with the business. It should be a strategic partner in driving business decisions. However in many cases the IT organization is seen purely as a utility function providing basic infrastructure services such as network, email, printing and accounting. Productivity gains provided by more advanced functions such as workflow applications, content management, B2B applications are not always perceived by executive as value added functions. This basic perception has an enormous impact on how IT is managed and funded. It also affects the way IT is viewed by the other departments, how IT will be able to add value to the underlying business, and how IT personnel will be motivated specially where it becomes clear that the IT organization is not strategic to the enterprise. The CIO's level of representation will be affected at the highest level. Important decisions will be taken without the input and cooperation of the IT organization. As a result IT will be ineffective as the organization is constantly in a reactive mode and will likely fail in

supporting basic functions. It is time for enterprises to stop considering IT as a pure cost center entirely dedicated to spending money and realize the benefits of advanced productivity.

Utility Function

There is a utility aspect of IT. If email, network access, printing and other basic needs are not met, the IT organization will be judged based on the failure to provide a single function. It is important for the IT organization to be structured in such a way that multiple functions can be supported successfully. A maintenance oriented IT organization will be seen as adding low value. Examples are ERP implementations that have proven to be so expensive that the company can no longer afford adding more functionality. The entire application staff is required to perform production support and soon the company will see this group as too expensive, redundant and adding no value. The organization should be structured in such a way that new functionality can be added in a flexible way while maintaining production support.

Company Industry Type

The utility versus strategic debate depends heavily on the industry type to which the company belongs. Software companies have a tendency to minimize IT organization because the nature of the engineering business provides a false sense of knowledge and security to the main group. If any of the corporate officers has an engineering background the negatives are compounded and can lead to dangerous miscalculations putting the entire company in jeopardy. Hardware and manufacturing companies seem to be more conservative in IT spending but the IT organizations are at the same time more in sync with the business. Manufacturing relies more heavily on computerized systems and the functional departments are less IT savvy. This is probably the single biggest issue CIO's have to deal with. Successful CIO's will be able to slowly turn the wheels in their favor if they are able to quickly demonstrate the productivity gains in their organization. Time is of essence and corporate patience is very limited especially in down times.

Be the Driver or Be Driven

Depending on the executive management style the IT organization will be driven or will drive. Regardless of being a utility provider or being a strategic partner the IT organization can take the lead in both models. Being the utility provider however will generate a 'sheep' like mentality where the organization is more often than not driven by the events. Braking out of this model is the challenge for the CIO because the challenges on the team are not visible and are often very risky for the team members. Risk management is the biggest challenge for the new CIO. Organizations do not tolerate risk in this down turn economy but taking risks will be essential to avoid sliding down the traditional path of being a driven organization. Successful risk taking needs to be rewarded by executive management and shared with the IT organization. The CIO needs to communicate the 'risky' strategy to both his team and executive management in order to be successful. If either direction is not followed the CIO will fail. Risk can be managed successfully by taking good advice and establishing relationships with executive management. Failing in a risky project does not necessarily signify the death of this strategy but can be very beneficial to the success of projects, depending on the risk loss that should have been expected to occur in case of

negative output. In short the CIO needs to take a proactive approach and communicate the strategy not only to upper management but to his team in order to pursue a driving more risky strategy to support growing organizations. The strategy can be put on hold in down turn times but some element of risk needs to remain in order to avoid breaking the spirit of the IT organization.

Types of Organizational Structures

Centralized Versus Decentralized

Once the role of IT has been determined in the overall company plan the CIO can start thinking globally. He has to make a decision about whether IT services should be run in a centralized management structure or not. This decision may not always be his choice. Some companies make this decision at a higher level but if the CIO has the luxury to make his own choice he will have to decide what services should be centralized and which one should be local. This is an eternal debate and strong opposition can be encountered from regional sites. IT is usually perceived as a local privilege by local sites. Remote employees do not have the global picture and changing attitudes is extremely complicated and can represent one of the CIO's biggest challenges. Passive resistance, local habits that are not fully understood by central management, cultural differences, and culture in the central office are the main factors to consider. Running a centralized organization requires very flexible people in the central office to understand regional needs. Time zones, awareness of local activities, sensitivity to the 'big brother' syndrome are elements which normal IT personnel are not very good in handling. IT personnel are usually extremely capable technical individuals who typically do not like to deal with human sensitivity issues in their busy lives.

Establish Guidelines for Centralizing Specific Information Services.

Helpdesk and Desktop Support

Local Functions

If policies and procedures are well designed, the core support activities, the style and the nature of the responses should be very similar throughout the organization. Local support should always have an escalation path back to central second level support. Equipment purchase and delivery standards should be as uniform as possible throughout the company. This does not mean central purchasing because shipping costs may be prohibitive. Small offices require stronger support people than in central locations where the tasks are more clearly divided and more junior people can be hired.

Influence on Support Team From Local Management

The type of local management varies from site to site. The most difficult ones are typically engineering sites. Engineers in general have a poor understanding of IT functions and network architectures. They also have very basic needs. Logon, backup, storage, Internet access, email and intranet for document sharing are most common ones. Any disruption in network activity can have an impact on product release schedules. The relationship with engineering has to be particularly well thought out. Sales organizations have a strong need for network access, remote access and laptop support.

Reporting to Local or Global Management

Reporting can go either way, local or central. As long as the procedures and policies are set by corporate in agreement with local management, the reporting line should not matter. The biggest danger of having local support disconnected from central policy is when local management changes, or has different views on, how things are handled. Example: purchase of non-standard networking equipment or telecomm equipment can have disastrous results on overall infrastructure. When local management controls the desktop support functions there can be a huge conflict in setting priorities for the local desktop people. Global projects will suffer and other IT strategic initiatives may fail. It is crucial that the central IT Operations Manager manages the expectations of both local IT and management personnel. This role is extremely difficult to assume and often leads to tensions. If this is the case the local support function should report local only and global projects will have to be driven with executive support. Resources to implement global projects will have to be supplied by central management and local assistance will be reduced to a minimum. Small to medium sized companies have enormous difficulties in achieving this balance. Local powerhouses well connected to executive staff can undermine global IT strategies. This is an area where many CIO's do not pay enough attention. Due to the nature of the high visibility of the support function poor management and misconstrued organization structures can lead to disaster for both the CIO and the whole IT organization. Our best advice is to appoint a particularly strong Operations Manager with strong negotiations skills who can establish a formal or informal SLA with local management.

Reporting Structure

Figure 1 illustrates the reporting relationship for local support departments in a global company. Three types of relationships have to be constantly monitored and reviewed for optimal results. The relationships between the different groups are the same for most IT departments. Depending on the nature of the department the relationships vary between the groups. For example the relationship between the local IT Support group and the local Organizational Management group is one of negotiation. Local support groups have great powers to potentially disturb other users. It is imperative that any change is negotiated before taking effect. Central management needs to support the local IT initiatives by doing the public relation work with the local groups.
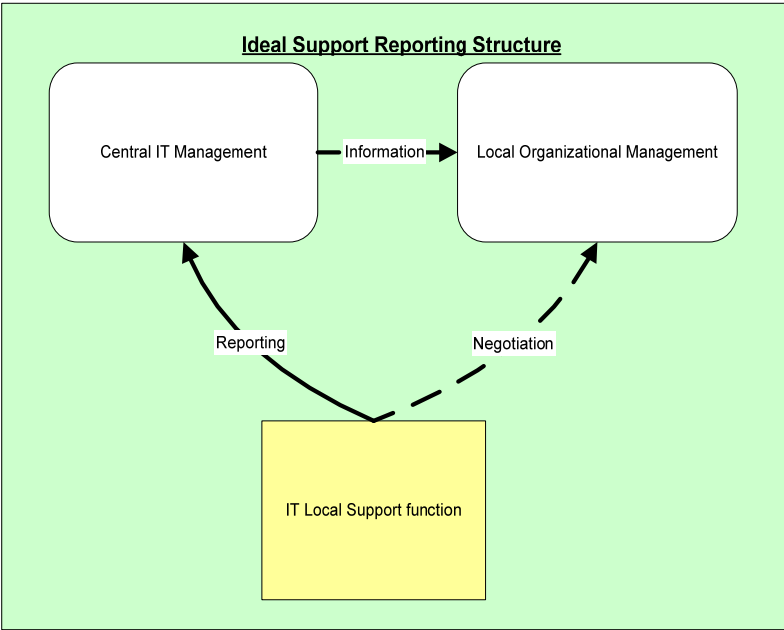
Figure 1

Network and System Administrator Functions

Local Functions are Migrating to Become Global Functions.
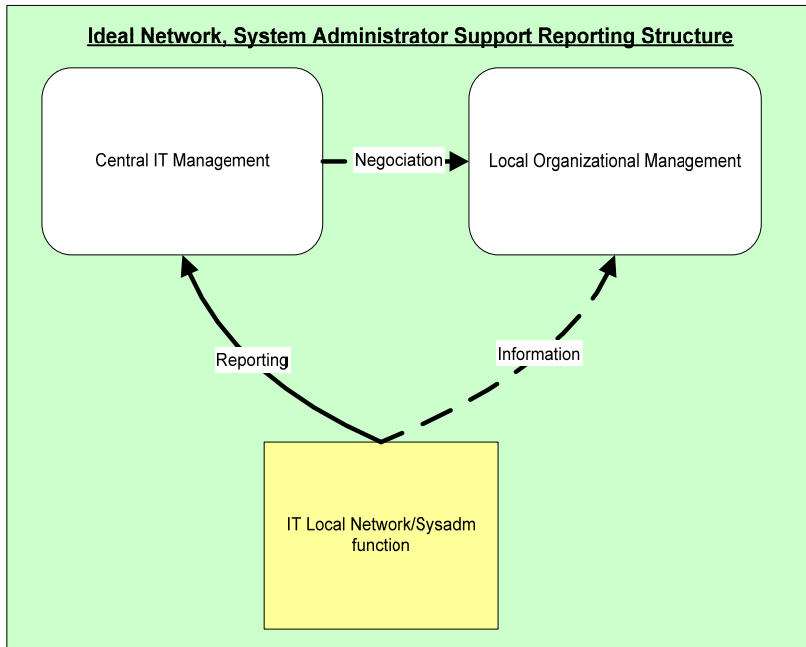
The network and system administrator functions require special consideration. In smaller companies where the CIO inherits resources distributed across the globe, the physical location of the individuals is relatively unimportant. Today's technologies allow for remote system management. Physical access to devices is only required for hardware failures and local desktop support can provide that function. The biggest challenge is the trust put in remotely managed individuals to perform the activities in a satisfactory manner. The biggest challenge for the IT Operations manager is to establish a trust relationship between himself and the remote people. Another important challenge in order to be successful is the requirement to have a global monitoring system and strict policies and procedures to avoid duplication or disruption in the services because of poor communication between the sites. Examples are changes made to Active Directory objects in the Microsoft environment by remote individuals without notifying other sites. These disruptions will reflect very poorly on the entire IT organization. Again this IT function needs to be extremely well managed and must gain the trust of executive staff. Only senior Operations people can accomplish the task.

Reporting to Local or Global Management

Network functions should always report to global IT management. The local IT team is reporting in a dotted line to local management for information and coordination purposes when changes are made to the network. Central IT management is responsible for negotiating the changes to the network with local management.

Reporting structure

Picture 2 illustrates the best organization structure for the network functions. We recommend a centralized model only.

Ideal Network, System Administrator Support Reporting Structure

Central IT Management — Negociation → Local Organizational Management

Reporting

Information

IT Local Network/Sysadm function

Figure 2

Telecomm Support Functions

Centralized Function from an Architecture Perspective

This is especially true nowadays due to the fact that telecom equipment is more integrated with the data systems. Voice over IP and Unified Messaging are examples requiring careful planning and worldwide support. User maintenance is a dedicated local support function and is often outsourced because remote sites do not have the correct skill sets or the time. Both diagrams for desktop support (Picture 1) and network support (Picture 2) apply to this area. Infrastructure design is related to network model and local support is related to desktop support.

Reporting Relationships

The telecomm people are assimilated into desktop functions for the day-to-day maintenance and with the network people infrastructure changes. They should report to the local management for operational matters and to central management for other changes

Applications Support Functions

Scope of the Applications to be Supported

Guidelines for this department can vary greatly from organization to organization. Large systems requiring a lot of change management and affecting global functions need to be centralized. Process owners should be distributed across the organization to capture local differences. A strong central business process analyst is required to handle the various, and sometimes contradictory, requests. The application manager needs to build a strong relationship with the process owners of the various departments but also with the Operations Manager to support the systems. Maintenance weekends need to be coordinated between the two managers to avoid disruptions in services.

Many smaller companies have decentralized systems such as accounting and HR systems that do not require many integration points. The necessity to centralize support may not always be required and could be counterproductive if central the decision making process is too slow. In the long run the smaller systems should be either linked together or replaced by globally accepted systems

Reporting Relationships

Picture 3 illustrates an ideal application support reporting relationship for global systems only. The challenge for central management is to be able to quickly grasp complex business process issues generated from cultural differences or different legal requirements overseas. Fast resolution of unusual problems is critical for success in this area. Many US based companies struggle heavily in providing adequate support to international sites and we see the support in this area as a risk and possible lost opportunities for large companies. Local management is frequently exasperated with the inability of central management to support local requirements efficiently and often resort in building their own application team with known disastrous effects on the company. Again this should be a particular concern to the CIO and he should not abdicate to pressure from local management and he should get support from central management to be able to build an effective global application support team.

Ideal Application Support Reporting Structure
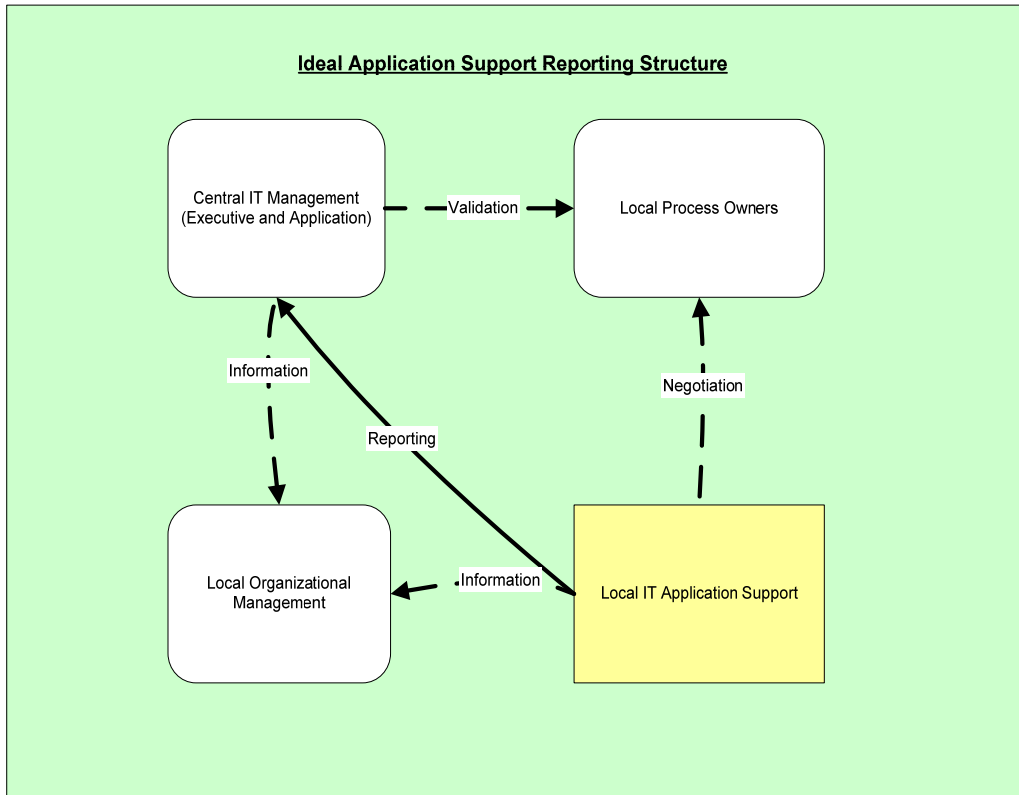
Figure 3

Reflections on Critical Information Systems Functions

This section addresses some of the shortcomings in IT organizations. We will not cover the entire spectrum of positions in the IT organization but address a few critical areas that are extremely important to the CIO.

Operations Director

Strong Management Skills

CIOs that hire weak Operations Directors will have a very difficult time being successful. Managing the day-to-day operations requires strong technical abilities, lots of diplomacy and an enormous amount of soft skills. Many CIOs focus on determining the overall IT strategy, understanding the business, setting the technological direction, but are very weak in creating a solid organization to support the infrastructure.

Challenges

The challenges posed by rapid changes in technology, constant retraining efforts of the operations team, extraordinary demands imposed by the user community, diminishing perceived added value of the 'plumbing' function are enormous for CIO's who have not

grown up in a technical environment and do not understand the needs of the Operations Manager (budget not being the smallest item). Fortunate CIOs who were able to pick the best infrastructure guys are the most successful because they can devote most of their time to further automation and enhance business processes through the application department.

Impact of Support Functions on the Success of the Operations Director

The Operations Director is directly responsible for managing the day-to-day activities of the IT team. Two particular areas of concern are desktop support and the system administrator functions. Typically these areas require highly skilled technical people not known for their soft skills. It is the responsibility of the Operations Manager to educate his team on the culture of the enterprise, how to deal with customers and how to deal with upper management to provide a buffer for the lower ranking employees. One of the greatest challenges is the risk of being overrun by one's own people. This happens when strong individual contributors are able to undermine their manager by imposing system restrictions on the user community for their own benefit. Weak or nonexistent standard operating procedures are often the cause of these situations. Users whose work is being affected by ill guided IT policies and practices will quickly find a way to circumvent the obstacles to the discredit of the entire IT organization. Once again it is important for the Operations Director to evangelize about the merits of having well defined support procedures. The CIO should always measure the customer's satisfaction through well-defined feedback channels, good metrics and personal contact with the heads of the functional departments.

Architect Function

Function Must Exist

The architect function within an IT organization does not often exist in the form of a dedicated person but is buried in the various functional teams. Projects are often managed in a vertical silo type mentality. It takes a seasoned IT specialist to view his project from a higher point of view to understand the ramifications and the impact of the new system on the existing environment. Based on years of experience it is our opinion that a successful IT organization could be well served by having that function explicitly available on both the infrastructure and applications side.

Where Should the Function Exist in the Organization

Embedding the function in an IT team is not an easy task to accomplish. The architect function is the 'fun' part for any project manager. Everybody thinks that he has the Holy Grail and is convinced that everyone else will jump on the bandwagon to embrace his new technology. Too often the technology is either too new or does not fit in the existing environment. This often leads to disastrous consequences. If the architecture aspect of a new system or project has not been examined in depth prior to implementation the project is not only risking failure on its own but may bring down other processes or systems. The pre analysis phase should contain a discussion on architecture because once the scope of the project is defined and approved. The actual analysis may discover some flaws but the

momentum is gone and a lot of project managers are unwilling to admit the architectural flaws and change course.

Internal or External Resources

Reviewing architectural issues require the assistance of external resources in most cases. Vendor assistance can be useful but can skew the results for the obvious conflict of interest reason. Using internal non-dedicated resources may also lead to conflicts as each project manager will have a tendency to skew the direction towards his technology. If he detects that potential conflicts may jeopardize his project he may simply not collaborate with other functional IT groups. These groups will soon detect that not enough communication has been distributed and this game can quickly escalate in endless meetings resulting in having a dysfunctional IT organization. Scars will remain and the whole process will not advance the case of IT.

Required Function

The IT organization should have either a dedicated architect function or a strong leader responsible for driving systems architecture designs through unbiased rules.
The architect function is critical, is too often overlooked and forgotten, resulting in poorly designed systems.

Database Administrator Function

Scope of Database Administration Function

Database Administration is a well-understood function in many IT shops around the world. The reason why we are even talking about this function is that many high tech shops do not necessarily share the same understanding of the scope for this position. In our analysis we discovered that the database administrator's role is not always understood by other functional departments and the misconception sometimes leads to a great deal of confusion and tension between IT and the rest of the organization. The activities from Database Administrators span the requirements of several IT groups. If the DBA is dedicated to supporting one specific type of system, e.g. the Enterprise Resource Management System, and the work is being filtered by a business system analyst there would be no problem. In many small to medium companies the DBA is directly interfacing with his customers who have a lot of unrealistic expectations.

Necessity to Include Business System Administration Functionality in the DBA's Role

The DBA is often requested to be the guardian of the data. In our view data integrity is a shared responsibility between the user and the DBA. The DBA needs to ensure that the system does not corrupt the data and that the necessary procedures are put in place to prevent bad data of being entered into the system. Bad data entry is generally a user issue. The DBA can assist in setting up business rules as defined by the user. The user expects the DBA to perform this function automatically. This is a utopian view from the user community. An experienced DBA can help users go in the right direction but in the end the

business rules have to be set by the user community or by a BSA. The BSA function, when not present, has to be embedded in the DBA function or has to come from the users. In small companies this aspect of the DBA's daily tasks is often overlooked and if the DBA needs to support multiple groups it often becomes impossible to fulfill the BSA function in addition to the DBA function as well as it should have been. So the recommendation to have successful DBA's is for IT management to set the expectations correctly with the user community and hire the appropriate type of DBA depending on whether there will be dedicated BSA support or not. Small companies should hire DBA/BSA type administrators in order to be successful.

Data Cleanup Responsibility

Another misconception from the user community is the data cleanup activity. It is often expected that the DBA will perform manual entries to correct bad data that in effect cannot be corrected. DBA's should not have to spend their expensive skills in correcting bad data. If data needs to be corrected, an interface, based on specific business rules, needs to be provided by the requesting functional department. Marketing departments are not good in defining detailed business requirements. The people usually involved in marketing are more artistic than analytical. They are market and consumer driven. It takes a strong IT team to foster a good working relationship with marketing folks. The DBA should be shielded as much as possible from the 'artistic' behavior of the service requesters.

Reporting Relationship

In light of the two previous considerations the DBA should ideally report directly to the application manager in charge of all DBA related projects. These could include web projects, customer service projects, marketing projects, and legal projects. If the DBA is required to support systems managed by multiple managers he should report to the next level up to avoid conflict of interests. However same level managers could agree on how to share DBA's and arbitration should be done the next level up.

Database Administrator Positioning in the IT Organization

The DBA function can be extremely tricky to position in the IT organization and the CIO should pay extreme attention that this function is being handled in his team. The DBA function is crucial because it spans across the entire spectrum of IT activities.

Desktop/Helpdesk/System Administration support

Regular and Executive Desktop Support

A strong support team is the most visible and the most essential IT function in a company. The CIO should always pay attention to this team, request appropriate metrics from the Operations Manager, reward and promote high performers. The directives coming from the CIO should be clear and crisp and no ambiguity when support decisions need to be made. Many companies have in addition to regular support a non-official and non explicit function

of 'Executive Support'. This is probably one of the biggest challenges in small to medium companies because the executive staff is often the founder or is part of the founder's family. We have seen many Operations Directors fail because little attention has been paid to this detail. Unfortunately this is a fact of life, this support type will always exist and the CIO, together with his Operations Director, will have to establish a few rules on how to deal with requests, sometimes unreasonable, coming from the top. If the rules are not clear the support staff will feel very vulnerable and will not operate in the most optimal manner.

Tips

A few tips to deal with this situation are setting high level priorities, creating an alliance with someone close to the top or simply dealing with the issues first at the expense of the rest of the organization. The last option may be the most practical one in most cases until the management is being replaced or the dynamics of the company's business undergo a radical change. In down turns it is easier to remind the executive staff that with dwindling resources the support function should be dedicated first to the business rather than exec staff type support.

Once again this is an area requiring great soft skills from the CIO.

Project Management

Necessary but Often 'Unwanted' Position

This position is more often than not completely overlooked by CIO's. Project management relates more to execution rather than strategy and is left to the lower levels in the IT organization. The danger by not openly supporting good and well established project management procedures would become visible during system implementations. Delivering systems and applications on time and within budget requires support at the CIO's level. He should be aware of how project management is conducted in his organization and he should be sufficiently confident that existing procedures and tools will work. Companies starting with project management may have a tendency to go overboard leading to paralysis in the management of larger projects. The selection of good project managers, whether they are embedded in existing functions or are dedicated people, should involve the CIO to ensure that the right personalities are being selected.

Project Manager Skills

Typically project managers should be amiable drivers with great analytical skills. Finding these skills is not an easy task. It is in the best interest of the CIO to make sure that his internal recruitment processes include ways to determine these skills. Using external advice is probably the best way to recruit project managers. Using internal resources will bias the selection process due to interpersonal relationships. Technical experts will be recommended by their peers while the soft skills will be ignored.

CIO Need Trusted Project Managers

The project manager function is a difficult one to fulfill especially in a constant changing environment where people change positions and companies very rapidly. Project managers need to have full support from the CIO in order to be successful. Conflicts should be arbitrated at the highest level as soon as possible. CIO does typically have neither the expertise nor the time to do the arbitration. In these cases they should select a trustworthy person make the decision in their place.

Decisions and Topics Impacting the Organizational Model

Impact of Policies and Procedures on the Prganization

Not enough emphasis can be put on the necessity to have good policies and procedures in place as a starter for good IT management. P & P alone is obviously not enough. Feedback mechanisms, excellent metrics, enforcement and above all executive staff level support for the policies are critical.

This is the area where the CIO's role is particularly important. He is the promoter, the advocate, the enforcer of the policies and procedures throughout the company. He needs to sell changes and new policies at large and is responsible of getting the buy in from each functional department. As counterbalance to the user's acceptance of policies he will have to spend quite some time negotiating with his team on how to provide the promised services according to the agreed upon SLA. If the CIO does not have enough resources to support the SLA he will be enable to satisfy the user's demands and as corollary he will be unable to enforce policies. Incredible demands are requested from the CIO in budget constrained IT organizations.

It is sometimes better not to create some policies if enforcement if not feasible. The CIO will have to get the buy in from exec staff not to have policies due to a resource shortage. At the same time he will have to navigate his ship in the fog and risk collision every time a crisis comes up. Users will scream for better processes and support procedures while the CIO is unable to supply them.

Constant attention to detail, constant monitoring of events, making his case based on ongoing support issues, getting peer support from the industry will be required to change the attitude of the company towards policies and procedures. Bad attitude often result from bad past experiences. Policies and procedures are often associated to more 'big brother' control, less flexibility from the user community. The notion alone of creating policies and procedures stem from the mainframe area. In today's client server environment where the users were able to shake off the restricted environment in which they were allowed to operate it has become very difficult to re-impose a minimum of common sense and discipline. Traditionally users will give control back to IT after integration disasters, budget restrictions, exec staff mandates, or simply because the technology has become too complex.

Negotiating good policies and procedures with his own organization, with his peers and with his management is probably one of the biggest challenges the CIO faces in today's environment. The nature of the company's business will heavily influence the degree of latitude the CIO has to maneuver to create the policies. Software companies are notoriously

bad for CIO's due to the nature of the business. Hardware manufacturers are far better as they are more conscious about security and are more process driven as they are more involved in manufacturing operations.

Role and Cooperation of Functional Departments

Influence on IT from Other Departments

External influence on how the IT organization is being run is rampant is today's world. Everyone in the world pretends to know how to run an IT organization based on the simple fact that they know how to switch on a personal computer.

The CIO's role is therefore complicated to the point where he can be in the position of having to justify decisions made on best practices or common sense or for technical reasons to senior management from other departments. Once again the importance of this role should not be quickly dismissed as a simple one to solve.

Engineering Departments

Engineering VP's will naturally trust their engineers. Software engineers are the worst type of customers for IT organizations. They understand system development but have no notion of networks in general, no notion of scalability and stability issues, little respect for the IT engineers as they are not 'true' developers. Some situations have the potential to create a completely distrust between the CIO and the VP of engineering as the message from IT is not always pleasant to hear on the engineering side. In our opinion this represents another major challenge for the CIO.

Marketing Departments

Marketing departments are famous for wanting to control 'their' web sites. The technology has changed to the point where web development is comparable to ERP implementations. Stability, redundancy, 24/7 support, scalability are common things in the traditional application world. In the first years of creating web sites it was relatively easy for anyone to create great looking web pages. Nowadays with the advent of application servers and database connectivity the software development needs to be done in a traditional IT change management environment. Setting the expectations to the marketing team and responding to extremely fast changing market conditions require close collaboration with marketing program managers. The CIO needs to develop a close relationship with the VP of marketing. Together they have a major impact on improving the revenue as online sales are set to grow in the coming years. It is imperative that web development should not be in the marketing department for the simple reason that web applications need to talk to other systems within the company. Application integration with CRM or ERP systems, unique customer database, data mining, email management, have to be designed by system architects from the ground up. Only seasoned IT personnel can successfully achieve these goals and the CIO will be the conduit to other departments to make this happen.

Sales Organizations

Laptop support and Remote Access are the largest support tasks facing the IT support functions to the sales departments. It is critical to have Sales executives fully support IT and vice versa to avoid potential loss of revenue due to malfunctioning equipment.
Sales organization has heavily influence the IT application department by strongly suggesting the outsourcing of activities which they would have to support. Example is the collection of sell trough data from large distributors where the sales representatives have to help IT to collect the data on a regular base. Sales people will like to outsource the activity while IT would prefer to handle this in house for integration issues with other systems. Outsourcing this activity yesterday was difficult, today things have gotten a little better with the advent of XML based data exchange technology. Full integration still remains a challenge and it will take years before B2B is fully accepted and standards are widely available.

The CIO has to ensure that working with sales his organization will be in a position to be successful and not take the blame for inaccurate reports due to partial information availability in the company.

Support Organizations

IT can come under a lot of pressure when the business rate of change increases or decreases rapidly. Shared services are usually the ones bearing the brunt of the changes. Human Resources have a particular impact on IT due to increased hiring or layoffs. Facilities are going through increased activity requiring more cabling, network and telecom activations from IT. Customer support is probably the biggest customer from IT from the shared services. The relationship can be difficult between the two organizations. Technical support has its own view on how systems and projects should be managed. A wise CIO will make friends with the heads of these departments rapidly to avoid affecting negatively the company's responsiveness to address business issues.

Budget Type Will Dictate the Organization Model

Budget discussions and restrictions will shape the nature of the IT organization. In today's world it is our opinion that IT related functions should all be captured in the IT's budget. This simple statement has broad implications. If functional departments are allowed to outsource or in source their own applications they will eventually outgrow their IT infrastructure. Traditional IT help will be requested leading to endless integration discussions, control issues and eventually loss of productivity.

The CIO needs to analyze his IT organization based on two factors: budget and services rendered within the budget. If the budget does not allow for some services to be handled in IT he should negotiate with exec staff on how to get them back or be very specific on the support level that can be provided to these 'rogue' IT organizations. It is usually bad practice and counterproductive to have, as example, finance departments run their own little application setup with some consultants without IT's blessing.

The CIO should seek help from the CFO to control IT expenditures in the company and avoid potential crises down the road.

Remote Management and Its Implications

Remote management should be a no-brainer with current technology. The main challenges for the CIO are to ensure that policies and procedures are in place to handle change management. Remote management is different than centralization in the sense that central systems can be managed remotely. It is often very productive to create remote support functions to 'integrate' remote sites. Centralized organizations tend to 'forget' the edges of the organizations.

The flip side of the coin is the danger of losing central control posing security risks. Change management is also more difficult to achieve and once again the quality of the operations manager will be tested in such an environment.

Impact of Business Drivers on Organization

The CIO has another important relationship to nurture in his already busy schedule. He should constantly evaluate who the business drivers are in the company and create a relationship to understand their requirements. They will typically have a lot to say on how support organizations will be structured and funded in the company. Business development, sales, marketing organizations are important for top line revenue. Road warriors require special attention. This invisible user community is too often forgotten by support personnel. It is the CIO's responsibility to organize his organization in such a way that this particular community is heavily supported. Dedicated functions to support VPN connections, network connectivity in far away places need to be built into the IT team.

Internet Support and Implications

Since the late 1990's almost every company on earth has created its own web site not only to promote its products and services but also to sell its goods through the Internet.

Traditionally the marketing department virtually owned the maintenance of the Internet sites but as the technology evolved and as the web sites have required more integration with the rest of the information systems in the company the burden of developing applications has fallen on IT or engineering.

It is extremely difficult to find experts on designing stable and scalable web sites. Revenue can be affected by poorly designed e-commerce systems. With the rapid demise of the various application server vendors the best way to get good application design expertise in house is for the CIO to hire a software architect who was preferably employed by the professional services group of the vendor whose application server is being used in the company. Building static web pages, managing databases are old skills readily available on the labor market. Experts in designing scalable and stable web sites are still in short supply although the down turn has improved the situation. The biggest mistake one could make is to believe that any Java programmer will do for this critical position.

The other critical position in the web team is the infrastructure guy. He is the person responsible to maintain the web site up and running 24/7, control all change management to ensure the infrastructure is capable of holding up with new applications and expected increased traffic. He will also be responsible for the managed services function for the web

site. Large web sites cannot be managed by in house teams for various reasons. The web site may be considered too strategic for the company to leave the maintenance responsibility in house or the skill-sets simply cannot be found. In any case the web architect and the infrastructure manager need to be working as one team. They should not report to one another in the ideal environment but it could be conceived that the infrastructure manager reports to the architect.

The third critical position in the web team is the overall manager who is responsible for managing new applications, manages the change control processes to implement new technology both on the application and on the infrastructure side. The web manager has to make sure that both the architect and the infrastructure specialist have worked together in any given situation. The reason why a third, neutral, person is required in the team is threefold: first the architects typically do not get too concerned with infrastructure issues resulting from the introduction of new features or applications; second the infrastructure specialist don't have the necessary knowledge to asses the impact on installing new applications on the site; third the web manager understand the integration issues with the other information systems in the company. He will be the guardian of data integrity, data flow to and from other systems.

We will end our observations on the web team by saying that a well structured
Web team can improve the visibility and credibility of the IT organization.

In Sourcing/Out Sourcing Impact on Organization

Outsourcing non-core activities can affect the IT organization in many ways. Outsourcing specific services which do not require any integration with internal systems and which can be done more economically than with internal resources make a lot of sense. Once integration is required it is imperative that everyone involved in the process is aware of the hidden costs and the additional vendor management overhead imposed on the IT organization. Small companies typically with small cash flow and little access to capital have a tendency to outsource as much as possible. The upfront costs can be very attractive but usually after careful analysis the total cost may be higher than expected. Companies with lots of dividing politics and weak upper management have also a tendency to outsource as much as possible to avoid conflicts. These companies are typically more cash rich but find themselves locked in expensive contracts which are difficult to break very quickly and very cheaply.

The debate whether to in source or out source specific information services requires a lot of attention from the CIO and he is constantly being presented with the greatest outsourcing solutions by vendors and his peers. Seasoned CIO's will easily be able to justify going one way or another but a lot will depend on his relative dotted line position in the company.

Metrics and Management

In times of rapid change it is a great challenge to the IT organization to provide decent metrics showing how efficiently things are done. The CIO should put metrics high on his agenda and automate the collection of meaningful numbers as much as possible. The IT managers should always augment their decisions rationale with good numbers.

Good metrics alone will not provide perfect service but can help steer the ship in the right direction. People are in general unwilling to provide numbers as they perceive this activity as an intrusion of privacy. "How do you dare to ask me numbers on how well I do my job?" are typical questions to IT management from the lower echelons.

The CIO's responsibility is to explain the rationale behind the numbers in a positive direction. Usually good metrics benefit an organization by improving processes rather than by replacing people.

Mergers and Acquisition Impact on Organization

The impact of mergers and acquisitions on the IT organization is huge and is the topic of several publications. The topic is only mentioned here to complete the list of high impact topics on creating and managing an IT organization.

The IT Organization in Down Times

The structure of the IT organization is in perpetual motion. During a company's startup time or ramp up period certain organization types work better than others. These types will not work as efficiently in a period of sustained low growth activity. It is up to the CIO to detect the moment when the IT organization needs to adapt to the new environment. Organizational change management is perhaps the most difficult thing to accomplish due to the sensitive nature of the topic. People do not like change in general. It is rare to find individuals getting excited with change but the successful CIO will posses the skill sets to make these changes almost transparently without upsetting the balance of services rendered to the company.

Final Comments on IT Organizations

Determining the right organization will be an ongoing exercise and will fluctuate over time. First and foremost is the necessity to acquire the right technical and soft skills in house. Furthermore a key aspect in setting up the correct organization is to analyze the overall company's organization to determine which risk level is being tolerated. The next step is to determine the relationship between the various departments and structure the organization to support the strategic ones. Some companies have a bigger emphasis on marketing, others on engineering, and others again on finance. The CIO's manager, CFO-COO-CEO, needs to be informed of how the IT organization is structured to provide full support. Outsourcing decisions will flow from this analysis as non core activities that will not be managed in house.

The CIO has the difficult task to create an organization based on reality in the company he works for. Best practices are being recommended by peers, in professional literature but in the end it is the ability of the CIO to judge how the group dynamics apply to his organization. Excellent CIO's will fail if they do not consider the dotted lines between the business drivers and mould their IT organization accordingly. It is equally important that the CIO successfully communicates his strategy and explains the reasons why the IT group is are being structured the way it is.