Organizing For Systems Management

By Rich Schiesser in conjunction with Harris Kern's Enterprise Computing Institute

Factors to Consider in Designing IT Organizations

Few employees enjoy departmental re-structuring, and IT professionals are no exception. Although IT professionals are involved in one of the most rapidly changing of technical industries, we still tend to be creatures of habit that, like most everyone else, prefer stable and unchanging environments as mo. Newly assigned executives and managers are often notorious for proposing a partial or total re-organization of their entire department as one of their first official acts.

But in the case of IT, re-structuring often is necessary to support company growth, increased customer demand, changing business requirements, acquisitions, mergers, buyouts or other industry changes. The question then becomes: on which factors should we base the re-structuring of IT organizations, particularly infrastructures. In my experience there are three key factors on which to base these decisions: departmental responsibilities, planning orientation and infrastructure processes. These factors tend to follow the normal evolution of an IT organization from company startup to full corporate maturity.

For example, startup companies usually structure their IT departments initially with a very basic organization such as that shown in Figure 1-1. As the company grows and IT begins expanding its services, an administrative department is added to the base structure as shown in Figure 1-2. The administrative department would be responsible for billing, invoices, asset management, procurement, human resources and other tactically oriented support activities. During these early building years of a corporation, IT usually structures its organization by departmental responsibilities. As the departmental responsibilities in each of the three groups reporting to the CIO continue to grow, they will likely evolve into an organization similar to that shown in Figure 1-3. The applications department is split out between application development and application maintenance. The infrastructure department is organized between technical services & network services, and computer operations. The administration department has added planning to its charter of responsibilities. This is a key event as it marks the first formal initiation of a planning responsibility within IT, although much of its early emphasis is on tactical, short-term planning.

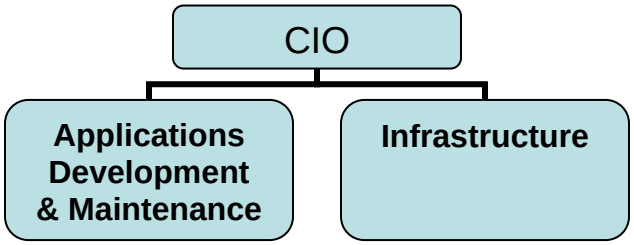

Figure 1-1 Basic IT Organization

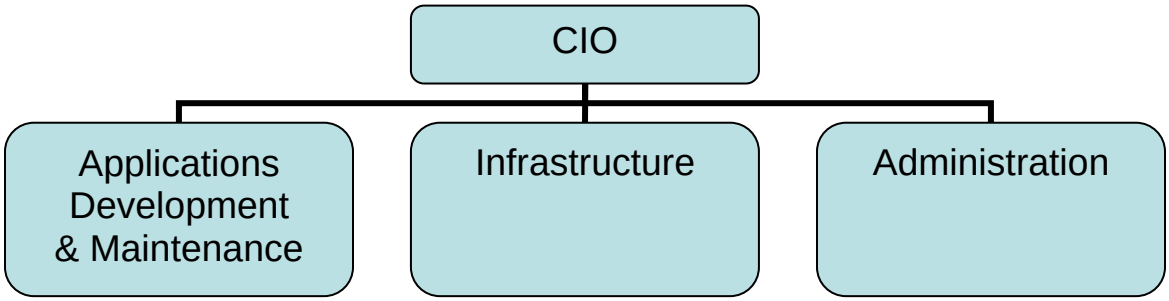

Figure 1-2 Basic IT Organization with Administration

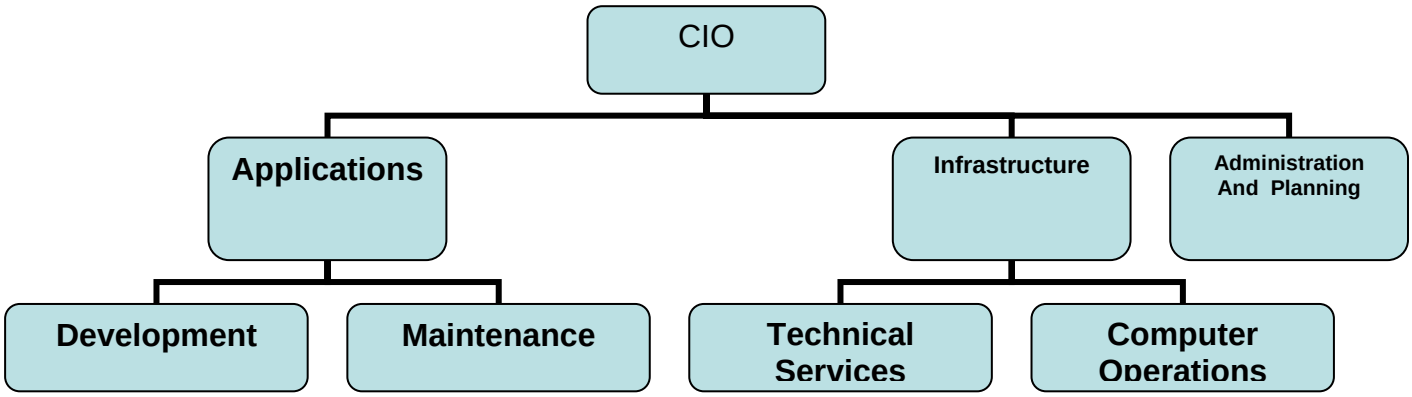

Figure 1-3 Dual Management Level IT Organization

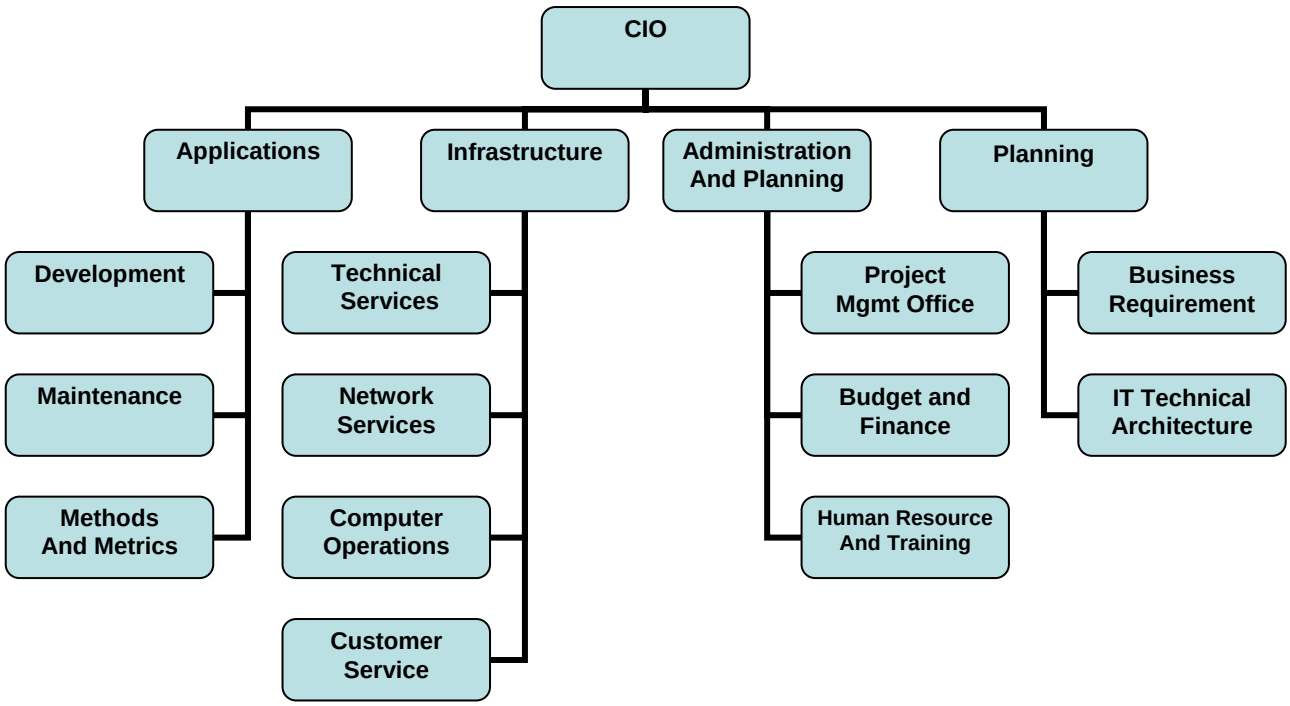

Figure 1-4 Tri-Management Level IT Organization

As the company and the IT organization both continue to grow, the planning orientation within the IT group will gradually shift from that of tactical to strategic. Eventually, all strategic planning activities can be centralized in a separate department. Over time this department would likely subdivide into two groups along the lines of business requirements planning and IT architecture planning. The ongoing growth of the company and its customers would cause the applications, infrastructure and administration departments to similarly subdivide into dedicated groups. This further evolution of the IT organization is shown in Figure 1-4. A final modification to the IT organizational structure is to align the applications areas along business units as shown in Figure 1-5. The intent of this increasingly popular refinement is to foster greater empathy between end-users and developers, and to increase their understanding of user requirements. At this stage of a company's maturity, the IT organizational structure is now being based both on departmental responsibilities as well as planning orientation. A third factor that influences IT departmental design is how the responsibility for infrastructure processes is integrated into the organizational structure. We will examine key factors of this design in the next several sections.

Factors to Consider in Designing IT Infrastructures

There are numerous variations as to how an infrastructure can be organized, but no one structure that applies optimally to all situations. This is due partly because factors such as

size, maturity and orientation of a firm and its IT organization vary widely from company to company and directly influence how to best design the IT infrastructure.

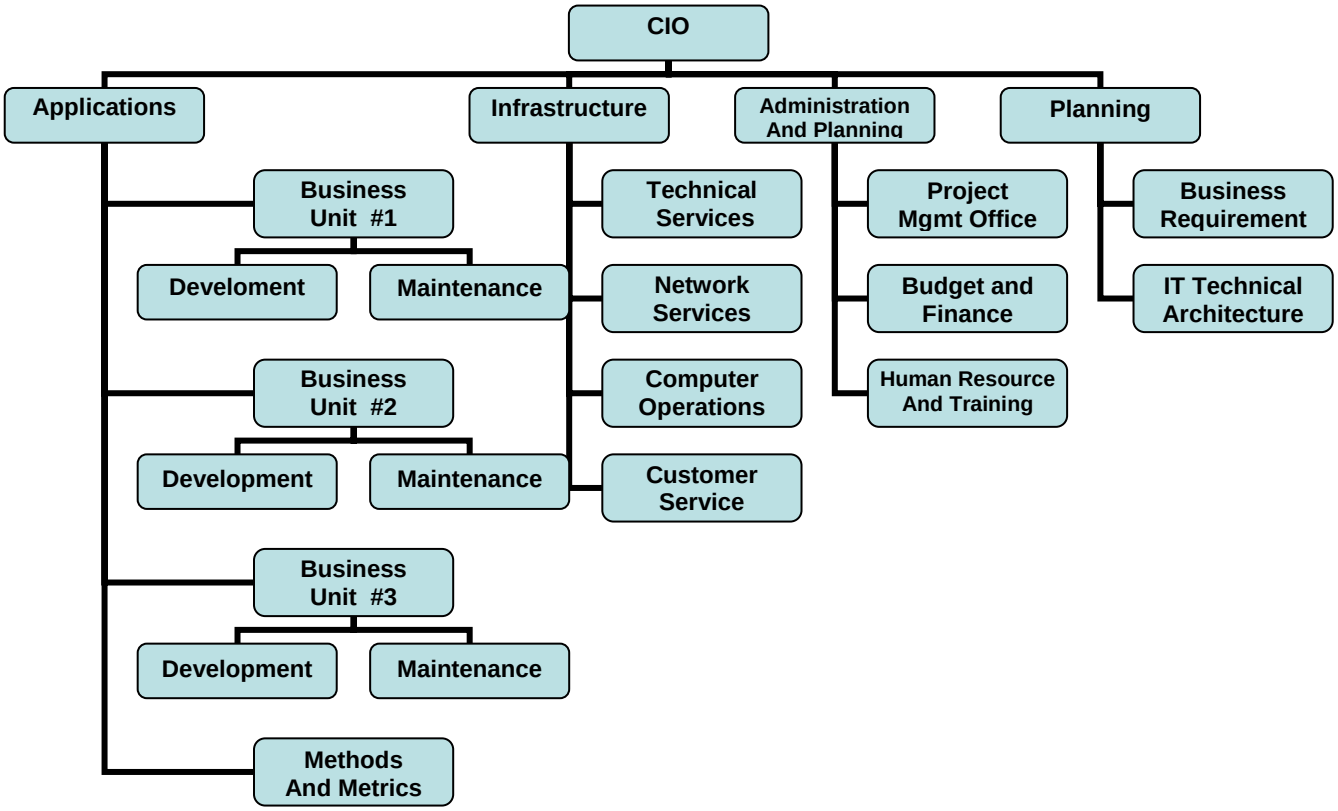

Figure 1-5 Tri-Management Level IT Organization with Business Units

Where some enterprises may combine the voice and data network groups, others may keep them totally separate. Some firms incorporate IT-wide functions such as security, planning, quality assurance, procurement and asset management directly into the infrastructure organization, while others keep these functions outside of the infrastructure. Three departments whose organizational locations play an important role in distinguishing world-class infrastructures from mediocre ones are the Help Desk, database administration and production control.

Alternative Locations for the Help Desk

The location of the Help Desk is a critical factor in the success of most any infrastructure. There are many reasons for this. Paramount among these is that the level 1 Help Desk is the first encounter most users have with an IT organization. The initial impression that customers form when they first dial the Help Desk number is often long lasting. Help Desks specialists refer to this critical interaction as *the moment of truth*, the point at which customers form their initial, and in the case of poor encounters often irreversible, opinions about the quality of IT services. The number of rings before answering, the setup of the menu system and especially the attitude of the Help Desk agent responding to the caller are all factors that influence a users perception of the effectiveness of a Help Desk. Table 1-1

lists in order of preference ten of the most common requirements users look for when seeking the assistance of a Help Desk.

Another reason the location of the Help Desk is so important is that it defines to what degree multiple Help Desks may eventually integrate into fewer instances. During their periods of initial growth, many IT organizations increase their number of Help Desks in response to expanding services and a growing user base. One of my prior clients had no less than seven Help Desks: Applications, Operations, Desktop Support, Technical Services, Database Administration, Data Network Services and Voice Network Services.

Table 1-1 What Users Prefer Most In an IT Help Desk

1. Answer incoming call within two rings. 2. Whenever possible, have a Help Desk agent, rather than a menu, answer the call. 3. Design menus to be as simple to understand and use as possible. 4. Sequence most commonly used menu items first. 5. Allow for the bypass of some or all menu items. 6. Calculate and report in real time average hold time to callers. 7. Practice good telephone etiquette by being polite, patient, courteous and helpful to callers. 8. When handing a call off to level 2 support, give the caller a reliable time estimate for follow-up and resolution. 9. Follow-up with level 2 support to ensure the problem is being worked. 10. Follow-up with callers to ensure their problem was resolved to their satisfaction.

They asked me to assess the feasibility of integrating some, if not all, of the multiple Help Desks into a much smaller quantity. After assembling a cross-functional team, I worked with them to design and implement a single, totally integrated customer service center (CSC). Much discussion centered on where to best locate this new centralized Help Desk. Some thought it best to have it outside of the infrastructure, or to outsource it, but the majority saw there were more benefits of control, staffing and measurement by keeping it within the infrastructure.

Some of the team members suggested it go under Computer Operations. The strongest argument for this alternative was that Computer Operations was the only other group at the time to be staffed 24x7 and this was the direction we wanted to take the CSC. But most of the calls coming into the CSC were desktop oriented rather than computer operations oriented. In the end we elected to locate the CSC the Customer Services Department of the infrastructure as a peer to the desktop support department. A major advantage of this configuration was that it put the level 1 support group (CSC) and that of level 2 (desktop support) both in the same organization. This facilitated handoffs between level 1 and 2,

drastically cut down on the finger pointing between these two groups and held each of them to higher levels of accountability. The organization of this type of infrastructure is shown in figure 1-6.

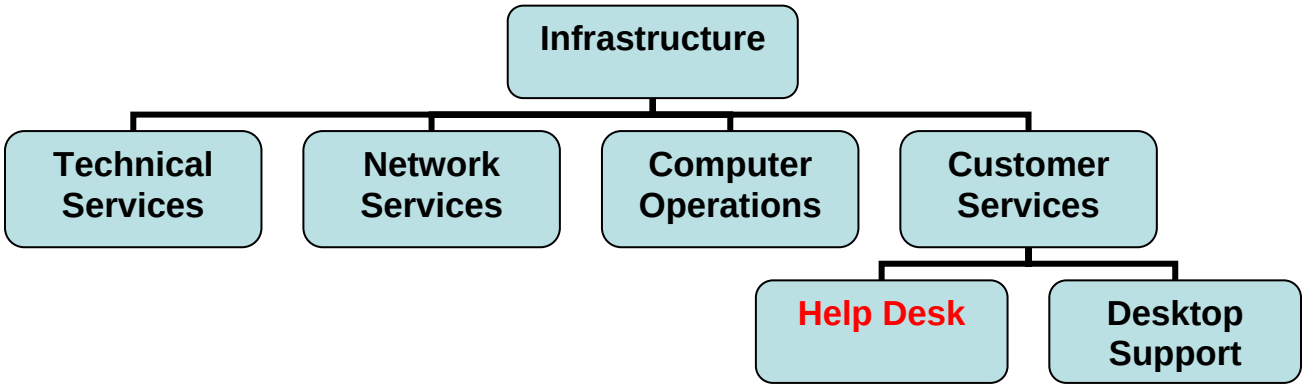

Figure 1-6 IT Organization Highlighting Help Desk

Alternative Locations for Database Administration

Many IT shops locate their Database Administration (DBA) group in the Applications Development department. The argument here is that the structure and design of the database is more closely aligned to the requirements of the users with whom the applications group directly works. But once the database is designed most of the ongoing maintenance involves performance and tuning issues which is more closely aligned with the technical services group in the infrastructure.

Some IT organizations have the DBA group reporting directly to the head of the infrastructure group, but I have only seen this work successfully when the database unit is unusually large and most all mission critical applications are running on sophisticated databases. Another alternative I have seen work well with large DBA groups is to put the architecture portion of the group, which is primarily strategic and user oriented, in the applications development group, and to put the administration portion, which is primarily tactical and technically oriented, in the infrastructure's technical services group.

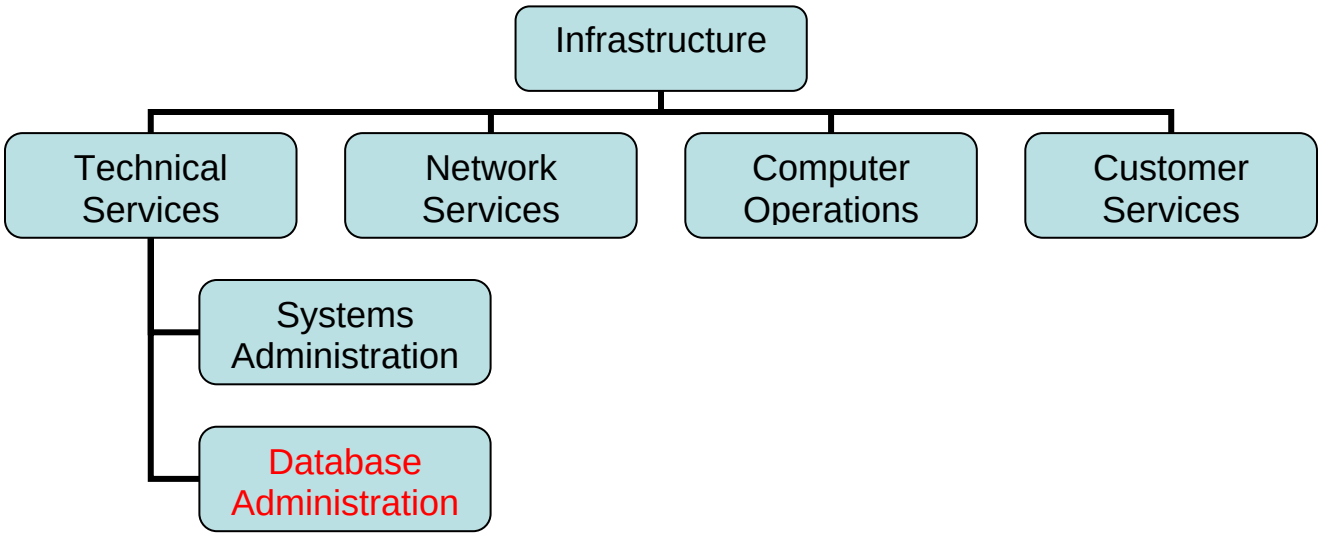

Figure 1-7 IT Organization Highlighting Database Administration

Alternative Locations for Network Operations

To many it would seem obvious that the Network Operations group belongs in the network services department. After all, both groups are involved with providing reliable, responsive, real-time network services. It makes perfect sense to initiate this type of network organization during the startup of an IT department. But as it grows, and particularly as network and computer operations assume critical 24x7 responsibilities, a compelling case can be made to have network operations report to computer operations. Both groups have around-the-clock monitoring and trouble-shooting responsibilities, both can benefit technically from cross-training each other, and both could provide each other more backup support. I recommend that IT organizations with mature infrastructures locate their network operations group within computer operations as shown in Figure 1-8.

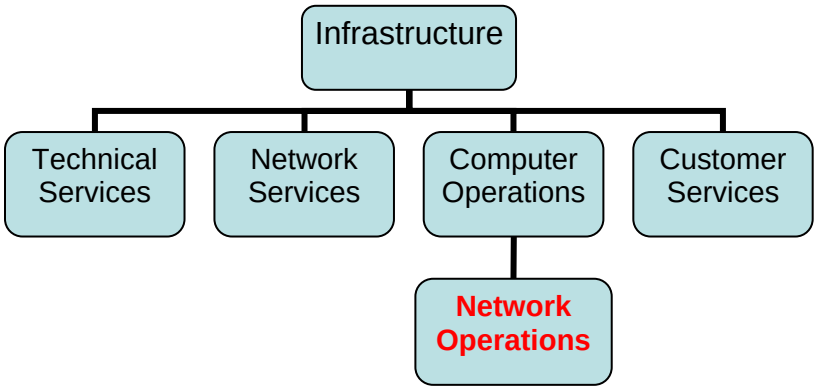

Figure 1-8 IT Organization Highlighting Network Operations

Alternative Locations for Systems Management

The existence and location of a systems management group is one of the key characteristics that make an infrastructure world class. Many shops do not include such a dedicated process group within their infrastructure, but those that do usually benefit from more effective management of their key processes. The systems management group is a separate department solely responsible for those infrastructure processes determined to be most critical to a particular IT environment. At a minimum, these processes include change management, problem management and production acceptance. Depending on the maturity and orientation of the infrastructure, additional systems management processes may be a part of this department such as capacity management, storage management, and security or disaster recovery.

This department usually reports to one of three infrastructure groups depending on the processes receiving the most emphasis. When change management or production acceptance is the key process, this group often reports to computer operations. In a traditional mainframe environment this department was called production support and could include batch scheduling, batch processing and output processing. When problem management is the key process this group usually reports to the customer services or Help Desk department. In a world-class infrastructure, all of the key processes are managed out of a single systems management group that reports directly to the head of the infrastructure. This arrangement gives systems management the visibility and executive support needed to emphasize integrated process management. This optimal organization scheme is shown in Figure 1-9.

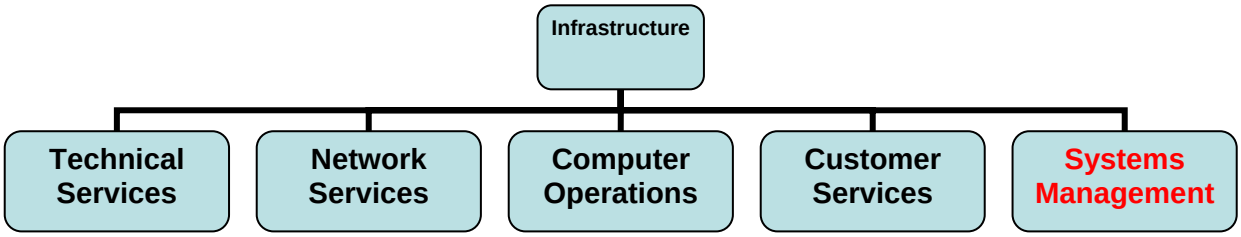

Figure 1-9 IT Organization Highlighting Systems Management

Recommended Attributes of Process Owners

One of the most critical success factors in implementing any of the 12 systems management processes is the person you select as the process owner. This individual will be responsible for assembling and leading the cross-functional design team, for implementing the agreed-upon process, for communicating it to all appropriate parties, for developing and maintaining its documentation, for establishing and reporting on its metrics, and, depending on the specific process involved, for administering other support tasks such as chairing change review boards or compiling user workload forecasts.

Knowing which process owner attributes are most important for a given process can help in selecting the right individual for this important role. Table 1-2 lists 19 attributes that apply to a high, medium or low degree to process owners of one or more of the 12 disciplines.

Reading the table across identifies disciplines for which a given attributes applies and to what degree. This can help assign potential process owners to those disciplines for they have the greatest number of matching attributes. Reading the table down identifies which attributes apply most for a given discipline. This can help identify potential process owners by matching a discipline to candidates who demonstrate the greatest number of attributes most needed.

Table 1-2 Recommended Attributes of Process Owners

Attribute	AV	PT	PA	CM	PM	SM	NM	CF	CP	SE	DR	FM
1. Knowledge of applications	Low	Med	High	Low	Low	High	Low	Med	Med	High	Med	N/A
2. Ability to rate documentation	N/A	N/A	High	Med	N/A	N/A	Med	High	N/A	N/A	High	Med
3. Knowledge of company's business model	N/A	N/A	Med	Low	N/A	N/A	Low	N/A	N/A	Med	High	Low
4. Ability to work effectively with IT developers	Low	Med	High	Med	Low	Med	High	Low	High	Med	Low	Low
5. Ability to meet effectively with customers	N/A	Low	Med	N/A	Med	N/A	High	N/A	Med	Low	Med	N/A
6. Ability to talk effectively with IT executives	Low	N/A	Med	Low	N/A	N/A	N/A	N/A	Med	Med	High	Med
7. Inspires teamwork and cooperation	N/A	Low	Med	High	High	N/A	N/A	Low	Med	N/A	N/A	Med
8. Ability to manage diversity	Low	Low	Med	High	Med	Low	Low	Low	N/A	N/A	N/A	Med
9. Knowledge of system software and components	High	High	Low	Low	Low	Med	Med	High	High	High	Med	N/A
10. Knowledge of network software and components	High	High	Low	Low	Low	Low	High	High	High	High	High	Low

11. Knowledge of software configurations	Med	High	Med	Low	N/A	Med	Med	High	Med	Med	Med	Low
12. Knowledge of hardware configurations	Med	High	Low	Low	N/A	High	Med	High	Med	Low	Med	High
13. Knowledge of backup systems	Med	N/A	Med	N/A	Low	High	Low	N/A	N/A	Med	High	High
14. Knowledge of Database systems	High	N/A	N/A	Low	Low	High	N/A	N/A	Low	N/A	Low	High
15. Knowledge of Desktop systems	Med	Med	Med	Low	Low	Low	Med	Med	Low	Med	Low	N/A
16. Ability to analyze metrics	N/A	N/A	Med	Low	High	N/A	Med	Med	Low	High	N/A	N/A
17. Knowledge of power and air conditioning systems	High	Med	N/A	Med	High	Low	N/A	N/A	Low	N/A	N/A	High
18. Ability to think and plan strategically	Low	N/A	High	Med	Low	Med	Low	N/A	High	High	High	High
19. Ability to think and act tactically	High	High	N/A	Med	High	High	High	Med	N/A	Low	Low	Low

Legend

AV – Availability Management **PA –** Production Acceptance **SM –** Storage Management

PT - Performance/Tuning **CF -** Configuration Management **SE -** Security

PM – Problem Management **CP –** Capacity Planning **DR –** Disaster Recovery

CM – Change Management **NM –** Network Management **FM –** Facilities Management

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objectives. And surprisingly, technology is the easy part. The key is taking a comprehensive approach that focuses on people, the organization structure, and processes.

Today, under the umbrella of the Institute, IT professionals from many of the world's leading companies come together to take advantage of our leading edge disciplines and strategies for improving the IT industry. Together with Prentice Hall/PTR, members of the Institute have published several 'how-to' books, including such titles as: IT Services, IT Organization, IT Systems Management, IT Production Services, High Availability, Managing IT as an Investment, and CIO Wisdom to name a few.