Guidelines on How to Staff an E-Mail System

The infrastructure and business conditions that influence the management of an e-mail system differ greatly between enterprises. Critical tasks can be overlooked, and trivial tasks overadministered, without a staffing plan.

Determining the number of staff — that is, full-time equivalents (FTEs) — to run an e-mail system poses many challenges to IS organizations. The "simple" answer to how many FTEs are needed is one to two FTEs per 2,000 to 5,000 users. However, this metric should be used as a baseline, not as a goal. For example, it doesn't scale proportionately for large enterprises where economies of scale are leveraged. Separately, the infrastructure and business conditions that influence the operational management of an e-mail environment differ greatly between enterprises, resulting in differences in FTE allocation. The manager of the messaging function needs to plan carefully.

When measuring FTE allocation, consider that the hours of one FTE will be spread across several people — such as a portion of a security administrator to handle e-mail boundary services (for example, spam and virus filtering), a storage system engineer to do disk allocation, backups and restores, or a messaging administrator for account provisioning.

Enterprises attempting to reconcile their FTE ratios against "industry standards" without factoring in management of the messaging service and technical items of complexity will fail in their benchmarking exercise and in realizing operational efficiencies.

Management of the Messaging Service

Enterprises with fewer than 5,000 users rarely have a dedicated e-mail group; instead, disparate IS organization groups handle the operational tasks. Strategic decisions for new capabilities, such as wireless e-mail or integration of e-mail features with line-of-business applications, may be made by central IS organization planning groups that declare mandates without understanding implementation hurdles.

Core Topic
Knowledge & Content Mgmt., Collaboration & E-Learning: E-Workplace Systems and Technology

Key Issue
How will enterprises improve the operational efficiency of their e-workplace infrastructures during the next five years?

Tactical Guidelines
- The IS organization and business units should agree on messaging application service expectations.
- Service expectations for e-mail support should be formalized through service-level agreements.
- An owner (with authority) should be assigned for the messaging application.
Enterprises with more than 5,000 users usually have a designated messaging group that is responsible for strategic planning, along with a subset of administrative and operational tasks. The messaging group in enterprises of tens of thousands of users also will serve as the relationship manager between the IS organization and the business units for messaging services.

Increasingly, the IS organization is serving as an internal service provider to the business units — complete with service-level agreements (SLAs) and chargebacks. Messaging is often the first application to fall under the new model (see "Seeking Resiliency, IS Redefines E-Mail Management").

Regardless of the size of the enterprise, lack of an owner (with authority) for messaging will lead to disconnects between the many people responsible for a part of the application and to inefficiencies in staffing the application.

**Technical Items of Complexity**

Enterprises define their messaging environment as a combination of services that can comprise simple, utility e-mail (send and receive capabilities only) to a rich collaborative architecture linking such services as e-mail, group calendaring/scheduling, instant messaging and document sharing.

Such disparities lead to wide differences in FTE allocation between enterprises. Therefore, the Gartner FTE model is aligned to the Gartner messaging total cost of ownership (TCO) model, which breaks out those operational elements required for e-mail and calendaring — the core of a messaging environment (see Figure 1).
FTE tasks included in the TCO model:

- Account provisioning: adds, deletes, changes; may not be included in Exchange 2000, where a separate directory or platform group may be managing Exchange accounts as part of Active Directory (a component of Microsoft's Windows 2000 architecture)

- Distribution lists: list creation and deletion; list member management is the responsibility of the list owner, for example, the business unit (see "Bringing Order to Unruly Distribution Lists")

- Gateways and connectors: SMTP; X.400; Exchange, GroupWise or Notes connectors; other protocols

- E-mail boundary services: includes antivirus, anti-spam, content filtering, encryption, aliasing, intrusion protection, message trailer disclaimers

- Mailbox maintenance: size quotas, retention schedules and so on

- Second-tier or third-tier support, depending on the structure of the "messaging group"
• Acceptance testing: for example, when moving an upgrade into production

• Policies: work with corporate groups (for example, legal, human resources and compliance) to develop an e-communication policy (for example, related to inappropriate language and message retention)

• Relationship management with the business units: establish SLAs and chargebacks; evaluate business unit requests for messaging add-ons (for example, instant messaging or document sharing)

FTE tasks not included:

• First-tier user support

• Network management: WAN or LAN

• Storage management: storage area network, network-attached storage and so on

• Firewall and security management

• Desktop: client installation, break/fix

• Application development and management

• User training

Product-agnostic — staffing levels for similar messaging environments — should not vary. However, rarely do two similar enterprises manage their messaging environment the same, which results in a 1-to-5 staffing difference between enterprises.

Elements that result in FTE differences include:

FTE tasks — When the messaging group assumes ownership for a greater number of tasks (for example, those under "FTE tasks not included"), the FTE count increases.

FTE skill level — When staff has little experience, more FTEs are required.

SLA — A tighter measurement and greater number of SLA metrics may result in a greater number of required FTEs. For example, a lower mean time to repair (MTTR) to third-tier escalation may require more FTEs than a higher MTTR due to additional staffing required to support escalation during peak business hours or for 24x7 operations. For example, a requirement to recover servers or a mailbox in a shorter period of time will require a higher investment in FTEs.

Standard operating procedures (SOPs) — Particularly in a distributed architecture with local administrators, lack of or loose
SOPs will result in more FTEs. For example, enterprises without a consistent storage backup schedule across remote mailbox servers will have to rely on the central data center to monitor and manage complex situations (for example, to ensure that the backups completed with no errors and were cataloged properly). This will frequently require FTE intervention to reconcile inconsistencies.

**Management processes maturity** — A mature set of management processes, such as operational change management, problem management, planning management and asset management, will result in fewer FTEs.

**Protocols supported** — The more protocols an enterprise supports, the more FTEs it will need. For example, an e-mail environment that supports HTTP, Post Office Protocol (POP) and Internet Message Access Protocol (IMAP) will require fewer FTEs than are needed to support HTTP, POP, IMAP and proprietary protocols normally seen in groupware-type applications, such as Domino and Exchange. Each additional protocol (for example, X.400) increases complexity and the number of FTEs.

**Topology** — A centralized server topology will require fewer FTEs than a decentralized topology. However, most enterprises with distributed offices will find a hybrid topology the most operationally and cost efficient. Although enterprises rarely factor network bandwidth into their e-mail TCO, bandwidth is not free. The cost of increasing bandwidth to a remote network router may be prohibitively more expensive than installing a remote messaging server, even if the installation of a remote messaging server requires local staffing.

**SMTP mail relay** — The complexity of the Internet SMTP mail relay architecture and number of domains managed will factor into FTE support (see "Managing the Internet E-Mail Namespace, Post Merger").

**Message volume** — Message volume continues to grow at a compound annual growth rate of 40 percent per year. Percentage of growth should be factored into the FTE allocation, understanding that economies of scale mean there will not be an exact ratio of growth to FTE count. For example, an enterprise may invest in monitoring and management utilities to manage growth.

**Integration with line-of-business applications** — E-mail-enabled applications will add complexity to the messaging environment and increase FTE requirements.
The External Service Provider Effect

A trend in the late 1990s and early 2000s toward outsourcing the e-mail environment was cut short by the poor economy. Enterprises, at least those that had never outsourced, became more wary of outsourcing. As lack of resources becomes the norm, there will be a re-emergence of enterprises that are willing to outsource some parts of their e-mail environment (for example, spam or antivirus filtering, e-mail business continuity or collaborative services that are closely linked to e-mail, such as instant messaging).

When any or all of the e-mail environment is outsourced, a new FTE role is required — a person to manage vendor relationships. Often, the person responsible for business unit relationship management will also manage the vendor relationship. The degree to which an outsourced model will affect the insourced FTE staffing depends on the services being outsourced.

**Bottom Line:** The IS organization will continue to be pressured to increase the number of supported messaging services and improve service reliability, while reducing operational costs. The IS organization and business units should agree on expectations (formally through a service-level agreement), then budget for full-time equivalents, accordingly. Enterprises can realize staffing efficiencies through simplification and standardization.