GARTNER GROUP

Hydro-Quebec

Management Presentation
Information Technology Overview Analysis
May 19, 2000

(Revised June 9, 2000)

Mainframe Data Center

- **Scope of Data Center**
  - 498 installed MIPs
  - Processing workload profile: 56% Batch, 5% interactive, 39% online
  - 68.4 FTEs
  - Budget = $19.7M

- **Peer Profile**
  - 8 companies,with a similar MIPs range and processing workload profile
  - Processing workload profile: 57% Batch, 9% interactive, 35% online
  - Peer group consists of 2 each Consumer Goods and Government, 1 each Utility, Insurance, Banking, and Manufacturing

Mainframe Data Center

- **Observations**
  - Cost per MIP is 14% lower than the peer group
  - Hardware costs are 40% lower than the peer group. Software costs are 2% lower than the peer group
  - Disaster Recovery is 25% higher than the peer group.
  - Personnel costs are in line with the peers. However, Hydro-Quebec is utilizing more FTEs than the peer group (68.4 versus 53.3) which is offset by lower per capita costs

GartnerMeasurement

Centralized Systems and Servers - UNIX

- **Scope of Centralized Systems and Servers**
  - Number of systems = 83
  - UNIX based systems
  - FTEs = 44.6
  - Budget = $7.2M

- **Peer Profile**
  - 14 companies with a similar workload, system makeup
  - Peer group consists of 4 Consumer Goods & Services, 2 each Banking, Government, and Financial Services, 1 each Utility, Transportation, Petroleum, Pharmaceuticals

Centralized Systems and Servers - UNIX

- **Observations**
  - Cost per system is 5% lower than the peer group
  - Lower hardware costs are offset by higher personnel costs. Some older systems have been fully depreciated
  - Disaster recovery spending is only slightly lower than the peer group.
  - Hydro-Quebec is utilizing a much higher number of FTEs to support this UNIX environment than the peer group (44.6 versus 18.6). A small percentage may be due to a lower workweek. High turnover and learning curve have impacted this area
  - The UNIX environment, in general, has a high rate of change for both Hydro-Quebec and the peer group

GartnerMeasurement

Centralized Systems and Servers - UNIX (SAP Only)

- **Scope of Centralized Systems and Servers**
  - Number of systems = 21
  - UNIX based systems
  - FTEs = 21.8
  - Budget = $7.9M

- **Peer Profile**
  - 10 companies with a similar workload, System makeup, etc.
  - Companies consist of 3 Insurance, 2 Financial Services, 1 each Transportation, Petroleum, Manufacturing, and Utility

Centralized Systems and Servers - UNIX (SAP Only)

- **Observations**
  - Cost per server is 5% lower than the peer group
  - Hardware/software costs are 8% lower than the peer group
  - Disaster recovery spending is 38% less than the peer group
  - Personnel plus outsourcing cost are 3% lower than the peer group.
  - The SAP system went "live" at the start of the study period, and has been very volatile. Most organizations experience a very high rate of change, often for both systems and applications in this highly changeable environment, even more so during the first year of live production.

GartnerMeasurement

Centralized Systems and Servers - NT

- **Scope of Centralized Systems and Servers**
  - Number of systems = 27
  - NT based systems
  - FTEs = 5.1
  - Budget = $.7M

- **Peer Profile**
  - 8 companies with a similar workload, system makeup
  - Companies consist of 3 Insurance, 1 each Government, Banking, Consumer Goods, Pharmaceuticals, and Manufacturing

GartnerMeasurement

Centralized Systems and Servers - NT

- **Observations**
  - Cost per system is 22% lower than the peer group
  - Hardware/software costs are 30% lower than the peer group
  - Very little spending in disaster recover in comparison to the peer group. At present, the NT servers house primarily non-critical applications but this will change in the future
  - Personnel plus outsourcing costs are 20% lower than the peer group, driven primarily by lower per capita costs

Centralized Systems and Servers - VAX

- **Scope of Central Systems and Servers**
  - Number of systems = 13
  - VAX systems
  - FTEs = 3.2
  - Budget = $.6M

- **Peer Profile**
  - 7 companies with a similar workload, system makeup etc.
  - Companies consist of 2 each Banking and Insurance, 1 each Pharmaceuticals, Petroleum, and Telecom

GartnerMeasurement

Centralized Systems and Servers - VAX

- **Observations**
  - Overall cost per server is 7% lower than the peer group
  - Hardware/software costs are 30% lower than the peer group. Much of the hardware is fully depreciated.
  - Disaster recovery costs are lower than the peer group.
  - Personnel costs are 62% higher; again Hydro-Quebec is utilizing more FTEs than the peer would to support similar workload, likely due to additional Y2K activities
  - These systems are being phased out

Database Technology - Oracle

♦ Scope of Databases Studied

- Oracle
- 1 Site
- Number of FTE's = 4.4
- 151 Total Gigabytes
- Primary Platform - Multiple (Unix, NT and VAX)
- Number of Users - 4,047
- Budget = ~~$4K~~ 0,6 M

♦ Peer Profile

- 9 companies with same DBMS, on similar platforms in a similar size range
- Companies consist of 3 Insurance, 2, Manufacturing, 1 each Utility, Government, Education, and Health

Database Technology - Oracle

- **Observations**
  - Overall cost per gigabyte 31% lower than the peer group, driven by lower costs in all areas
  - Database costs are 33% lower than the peer group
  - Tools spending is about 1/3 that of the peer group. Additional tool sets are being installed in Y2000.
  - Personnel costs are 27% lower than the peer group, due primarily to utilizing fewer FTEs than the peer group would to handle the Hydro-Quebec workload (4.4 FTEs for Hydro-Quebec versus 6.1 FTEs for the peers). FTEs for Hydro-Quebec are very experienced.

GartnerMeasurement

Database Technology - Oracle (SAP)

♦ Scope of Databases Studied

- Oracle
- 1 Site
- Number of FTE's = 1.8
- 232 Total Gigabytes
- Primary Platform - UNIX
- Number of Users - 3,000
- Budget = ~~$3K~~ 0,5M

♦ Peer Profile

- 6 companies with same or similar DBMS, on same platform in a similar size range
- Companies consist of 2 Manufacturing, 1 each Education, Government, Insurance, and Consumer Goods

GartnerMeasurement

Database Technology - Oracle (SAP)

- **Observations**
  - Overall cost per gigabyte is 40% lower than the peer group, driven by lower costs in all areas, but the primary driver is the lower personnel costs
  - Cost of the database is 22% lower than that of the peer group
  - Hydro-Quebec is not utilizing any tools that are external to Oracle to manage these databases. Most peers are not single site Oracle installations. Again, additional toolsets will be installed in Y2000.
  - Personnel costs for the peer group are 2.5 times that of Hydro-Quebec primarily because the peer group would utilize more FTEs to handle the Hydro-Quebec workload (1.8 FTEs versus 2.3 FTEs), and because per capita costs are lower
  - (Note:) Peer group contains companies with Oracle databases that are not exclusively SAP related

GartnerMeasurement

Database Technology - DB2

♦ Scope of Databases Studied

- DB2
- 1 Site
- Number of FTE's = 3.7
- 102 Total Gigabytes
- Primary Platform - MVS
- Number of Users - 2,200
- Budget =~~$4K~~ 0,6 M

♦ Peer Profile

- 5 companies with same DBMS, on same platform in a similar size range
- Companies include 2 each Government and Insurance, 1 Utility

GartnerMeasurement

Database Technology - DB2

- **Observations**
  - Overall cost per gigabyte is 10% lower than the peer group, driven primarily by lower personnel costs
  - Cost of the database is 41% lower than the peer group, but is somewhat offset by tools spending which is about 22% higher than the peer group
  - Effective use of additional tools can often lead to managing the database with fewer FTEs
  - Personnel costs are significantly lower than the peer group, primarily because the peer group would utilize more FTEs to do Hydro-Quebec's workload (4.6 FTEs versus 3.6 FTEs)
  - This is a very mature environment with a minimal amount of change for Hydro[Quebec

Balisage 1998
Diagnostics, plan d'action et performance visées
Direction Services

Processus: Gestion de l'information documentaire
Produit: Gestion documentaire

PRODUITS GÉNÉRIQUES / SPÉCIFIQUES	DIAGNOSTICS ET PRONOSTICS	PLAN D'ACTION	PERFORMANCES VISÉES
Gestion des documents/Entreposage de documents semi-actifs	Les pratiques d'entreposage renvoient à une variété de produits et services adaptés aux besoins du client, lesquels produits et services sont facturés à la carte. De plus, la tendance actuelle du marché est d'offrir des systèmes informatiques complets reliés au processus de gestion des documents, facilement adaptables en fonction du profil et des exigences variées de la clientèle..	Valider la pertinence d'instaurer une grille de tarification des produits et services offerts par les centres de documents semi-actifs de l'entreprise. Intégrer au projet de gestion électronique de l'entreprise un module permettant de gérer les documents sur support papier et au client de retrouver facilement son information tous types de supports confondus.	Gestion du contenu des documents accessible aux clients
Gestion de la documentation/Recherche et veille	Les services de veille concernant l'information stratégique vont prendre une place de plus en plus importante dans les processus d'affaires des entreprises. Aussi convient-il d'anticiper la demande en identifiant l'information qui pourrait être stratégique pour notre clientèle.	Instaurer un processus continu de veille.	Coordination d'un réseau de veille pour l'entreprise
Gestion des documents/Gestion électronique	Avec son projet d'implantation de gestion électronique intégrée via l'intranet dans toute l'entreprise, Hydro-Québec est un chef de file actuellement face aux entreprises balisées.	Poursuivre le projet actuel et du même coup utiliser l'expertise ainsi développée à saisir les opportunités d'affaires qui s'offriront à nous.	Faire de la veille afin de demeurer un chef de file dans le domaine