Measuring the cost of
(OSS) IT Infrastructure
Focus today.....

• Business change is driving IT change faster
• IT infrastructure makes it difficult to respond quickly
• We can’t manage what we can’t measure
• We need to benchmark against other organisations
• We need to be able to model solutions
• We need a methodology to drive IT infrastructure evolution
Change is the only Constant

Change Drivers

• Organisational Change
  – Mergers, demergers, reorganisations

• Business Strategies
  – New products, services
  – New channels
  – New competition, new alliances

• External Factors
  – Government policy, legislation, demographics

• Technology
  – Communications Technology - Internet
Government vs “the market”

• Fast paced
  – Time to market
  – Shortened product lifespan
  – Agile competitors

• Unpredictable
  – Rapid evolution – twists and turns

• A-stable
  – No new stable situation in sight

• Geographic
  – No boundaries (may be fulfillment limited)

• Temporal
  – Twenty four by seven demands
The factor “G”

- Independence
  - No single partner
- Interoperability
- Perenniality
  - Data and services
- Transparency
  - No black boxes
- Democracy, Freedom
  - Modify according citizens desires
- Cost
- Security and privacy
  - Who cares who you are?
The Cost component

What is the biggest effect Open Source Software will have on the industry?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force competition</td>
<td>52%</td>
</tr>
<tr>
<td>More innovation</td>
<td>50%</td>
</tr>
<tr>
<td>Better code</td>
<td>22%</td>
</tr>
<tr>
<td>Lower prices</td>
<td>14%</td>
</tr>
<tr>
<td>Better staff</td>
<td>10%</td>
</tr>
<tr>
<td>Better reliability</td>
<td>6%</td>
</tr>
<tr>
<td>Better security</td>
<td>6%</td>
</tr>
</tbody>
</table>

Percent of 50 Global 2,500 companies (multiple responses accepted)

Source: Forrester – 8/2000
IT Cost - Chart of Accounts

- Direct Costs 56%
- Indirect Costs 44%

- Hardware & Software
- Operations
- Administration
- Downtime
- End User Operations

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IT Costs Chart of Accounts

• **Direct – Assets (best known)**
  - Hardware:- servers, clients, peripherals, network
  - Software:- operating systems, applications, utilities, management
  - Upgrades, Supplies, Spares

• **Direct – Labour (less well known)**
  - Operations:- technical services, planning and process management, database management, service desk
  - Administration:- finance administration, IS training, end-user training

• **Indirect – Labour (least well known)**
  - End-User Operations:- peer support, casual and self learning, formal learning, application development, file and data management, futz factor
The full cost of owning and supporting a distributed computing environment extends well beyond the basic cost of hardware.

The life cycle costs are important.

- Acquisition
- Operation
- Deployment
- Retirement
### 1999: NT claims 37% less than « Unix »

<table>
<thead>
<tr>
<th>Component</th>
<th>NT Compaq</th>
<th>Sun Solaris</th>
<th>GNU/Linux intel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial system purchase</td>
<td>367,250</td>
<td>791,190</td>
<td>- / -</td>
</tr>
<tr>
<td>Installation, Training</td>
<td>13,300</td>
<td>17,860</td>
<td>=</td>
</tr>
<tr>
<td>System &amp; network upgrades</td>
<td>10,310</td>
<td>17,190</td>
<td>=</td>
</tr>
<tr>
<td>Management costs</td>
<td>439,520</td>
<td>605,990</td>
<td>=</td>
</tr>
<tr>
<td>Application developments</td>
<td>392,870</td>
<td>664,060</td>
<td>= / -</td>
</tr>
<tr>
<td>Technical support</td>
<td>25,040</td>
<td>40,320</td>
<td>= / -</td>
</tr>
<tr>
<td>Yearly TCO</td>
<td>1,248,290</td>
<td>2,136,620</td>
<td></td>
</tr>
<tr>
<td>Yearly TCO per server</td>
<td>42,130</td>
<td>56,270</td>
<td>25%</td>
</tr>
<tr>
<td>Yearly TCO per user</td>
<td>1,350</td>
<td>2,160</td>
<td>37%</td>
</tr>
</tbody>
</table>

BRG study: 925/990 users (costs in $)
A Linux Vendor Analysis (Client)

The ID-Pro AG is a company specialised in Linux Solution, Support, Training
100 Workstations, from NT to Windows 2000 or GNU/Linux

TCO per user / year: Windows 2000: $2,070  Linux: $1,450  -30 %

– Software costs
– Support
– Downtime (stability)
A Linux Vendor Analysis (Server)

Windows 2000 / GNU/Linux Servers:
• Software costs
• Installation
• Training
• Support

TCO on Servers: from 10 to 15% after 10 years
What is TCO?

A business model to help organisations identify, understand and benchmark the total cost of procuring, owning and using IT over time.
Determining the New Architecture

- Business Strategy
- IT Strategy
- Candidate Architectures
- Selected Architecture
- Organisation TCO
- Benchmark TCO
- TCO Tool
- EVC Tool
The TCO Cycle
Phases of TCO

**Assessment**
- IT Planning
- Asset Information
- Depreciation Schedules
- Budget Information
- Purchase Orders
- Help Desk Metrics
- End User Surveys
- Utilisation & Salary Information

**Benchmarking**
- Competition
- Geographic Locations
- Size & Complexity

**Recommendations**
- Technology Improvement
- Process Improvement
- People Improvement
- Service Solution Recommendations

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Best Practices

IT improvement is influenced by three key factors:

• Technology improvement is the enabler
• Process improvement drives efficiency
• People improvement manages effectiveness

<table>
<thead>
<tr>
<th>Technology Improvement</th>
<th>Process Improvement</th>
<th>People Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Management</td>
<td>User Management</td>
<td>User Training</td>
</tr>
<tr>
<td>Systems Management</td>
<td>Standardisation</td>
<td>IS Training</td>
</tr>
<tr>
<td>Managed PC</td>
<td>Practice Management</td>
<td>Highly Motivated IS Staff</td>
</tr>
<tr>
<td>Scalability</td>
<td></td>
<td>Stable IS Organisation</td>
</tr>
</tbody>
</table>
Results and Findings
Costs by Applying Best Practices

TCO per Client per Year

No Best Practices | Technology | Process | People | All

$0 | $2,000 | $4,000 | $6,000 | $8,000 | $10,000

Indirect | Direct

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GVC Simplified Structure Diagram

GVC = EVC Economic Value Creation + Factor “G”
The Consolidation Process

- Scaled to handle any size project
- Each phase fully documented

Proven Processes
Holistic Approach

PHASE 4
Workload Migration
- Site Surveys
- Generate Schedule
- Facility Preparation
- Comm, H/W, S/W Delivery
- Complete Site Prep
- Training
- Tailor checklists
- IT 1, 2, and 3
- Mock Move
- Cutover
- Readiness Review

PHASE 3
Program Startup
- Program Office Startup
- Finalise Schedule
- Prepare Briefings
- Establish Controls
- Establish Program Review
- Establish Interface
- Finalise Site Survey Checklists
- Pilot/Proof of Concept
- Initiate Workload Migration Activities

PHASE 2
Planning & Engineering
- Program Office Startup
- Finalise Schedule
- Prepare Briefings
- Establish Controls
- Establish Program Review
- Establish Interface
- Finalise Site Survey Checklists
- Pilot/Proof of Concept
- Initiate Workload Migration Activities

PHASE 1
Requirements Analysis
- Joint Project teams
- ID Candidate Sys
- Data Collection
- TCO/Business Case

End-to-End Strategy
The TCO Cycle
EVC comparisons

• The Operating system benchmarks
  – The impossible “neutrality”
• Why is a global – generic comparison so difficult
• The relativity of benchmarking
• The objectives of the OSS Study
  – Factsheet / classification
  – Report on OSS usage
  – Market study (usage and distribution)
Conclusions

• Free software does not mean automatically low TCO
• TCO estimation is depending on the number and weight of IT architecture components
• TCO itself is a component of Government value Creation (GVC)
  = EVC (TCO / TBO / TRO) + Factor “G”
• We can’t manage what we can’t measure
• How can we measure Factor “G”
• TCO provides a valuable tool to help us measurement; EVC / GVC helps us build the business case to justify our decisions
Thank you!

This presentation was elaborated with

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