<table>
<thead>
<tr>
<th>Title</th>
<th>Enabling the information age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author(s)</td>
<td>Kwanchai Patanapongpibul</td>
</tr>
<tr>
<td>Date</td>
<td>1998</td>
</tr>
<tr>
<td>URL</td>
<td><a href="http://hdl.handle.net/10220/2321">http://hdl.handle.net/10220/2321</a></td>
</tr>
<tr>
<td>Rights</td>
<td></td>
</tr>
</tbody>
</table>
Enabling the Information Age

Kwanchai Patanapongpibul
Sales Consulting Manager
Oracle Systems (Thailand)

Personal Computing and Network Computing
The NC Mission

To deliver inexpensive and easy-to-use appliances based on open standards for information access and communications

What is Network Computing?

- Low cost, easy-to-use appliances
- Everything shared "on the network"
- Connect from anywhere to anywhere
- 1/3rd the price of PCs with 1/4 the cost of management

What is Network Computer?

A Low Cost Digital Appliance Computer

Network Devices
What is the NC?

- Browser with Email and Universal Mail Gateway
- Word Processor, Spreadsheet and Presentation Graphics
- Data Entry and Forms based Applications
- JAVA Applets

All the functionality that most people need
- Lower Initial Costs
- Lower Management Costs

PC Computing Today

- $3,500 PC Purchase Price
- $8,000 Annual Cost-of-Ownership
- Microsoft Office 95
  - 136 Mb Hard disk space
  - 24 Mb RAM
- 80% of all users use only 20% of the functionality

NC and the PC

- The NC delivers a consistent user interface across Internet appliances (e.g., NCTV, NC Workstation, NC Phone, etc)
- PCs are used for content creation, while the NC is primarily for content navigation and delivery
- PC run 100% of applications; NC applications will run on PCs
- NC will run a few core communications and personal productivity applications and a plethora of Internet JAVA applets
What is Network Computing?

- Everything is stored on the network
- Everyone is connected to the network

NCI Target Markets

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Community</th>
<th>Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporations</td>
<td>Schools</td>
<td>Home</td>
</tr>
<tr>
<td>Vertical Industries</td>
<td>Small Business</td>
<td>Personal</td>
</tr>
<tr>
<td>Governments</td>
<td>Local Government</td>
<td>Public</td>
</tr>
<tr>
<td>Institutions</td>
<td>Departmental</td>
<td>Hospitality</td>
</tr>
<tr>
<td>Terminal Replacement</td>
<td>Packaged Applications</td>
<td>Enhanced TV</td>
</tr>
<tr>
<td>Corporate Apps</td>
<td>Information Access</td>
<td>Entertainment</td>
</tr>
<tr>
<td>Information Access</td>
<td>Personal Productivity</td>
<td>Personalized Content</td>
</tr>
</tbody>
</table>

NCI Market Products

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Community</th>
<th>Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC Administration</td>
<td>Network in the Box</td>
<td>NC Custom Connect</td>
</tr>
<tr>
<td>Server</td>
<td>NC Server Suite</td>
<td>NC Custom Connect</td>
</tr>
<tr>
<td>NC Desktop</td>
<td>NC Desktop</td>
<td>NC TV</td>
</tr>
<tr>
<td>NC Card</td>
<td>NC Card</td>
<td>NC Card</td>
</tr>
</tbody>
</table>
Heme Environment

Education Environment

Bi-Design

- Consumer
- Corporate
Enhanced Television

<table>
<thead>
<tr>
<th>TV Today</th>
<th>Enhanced TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive</td>
<td>Passive and Interactive</td>
</tr>
<tr>
<td>Generalized</td>
<td>Personalized</td>
</tr>
<tr>
<td>Entertainment</td>
<td>Entertainment, Education</td>
</tr>
<tr>
<td>and Education</td>
<td>Communication, Library</td>
</tr>
<tr>
<td>One Dimension</td>
<td>Multi-Dimension</td>
</tr>
</tbody>
</table>

NC TV - Enhanced Viewing

The network, most visually interesting way to access personalized web content.

Corporate

Fast and Faster
125Mbps - 100Mbps

Open Standards
(Java, RMI, RMI)
Network Computing Architecture

Java, CORBA, DCOM, IIOP, GIOP

Wired Marketplace Enabled by NC

Success Factors for the Future

- Increased Security (Public Key)
- Plug & Play Servers
- Changes in Information Retrieval and Gathering
- Free Roaming with Security
- Adherence and Development of Open Standards
Paradigm shifts expand usage and users for technology

- Focus on new users and uses
- Expand capabilities for terminal users, lower cost for PC users

Network Computers ... are the interactive components of the Interactive Network Computing System... The Interactive Network Computing System... IBM Network Stations A Family of Network Computers

Borders and boundaries disappear.
Information assets are becomingly critical.
Barriers to market entry are reduced.

ATTENTION: The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library
The NC is not about hardware. It is not about software. It is not about whether it has more or less capability than a PC. The NC is about network computing. It's about how users choose to design, deploy and manage their network resources.

Our bottom-line recommendation is that pilot projects in transactional applications should be undertaken in 1998.

NCs will enable a whole lot more flexibility than we're used to. Windows and Macs will remain strong for many and many, rising to 20% by 2001. NCs will match PC volumes by 2005; dwarf them by 2010. The rise of NCs will change PC and PC software vendors' business models.

Access for today:
- Access many more users and applications from one desktop
- More than just Java applications
- More than just Java applications
- Windows applications
- Java for new services at the server without touching the desktop

Access for tomorrow:
- Java for new services at the server without touching the desktop
- Easy to add new services at the server without touching the desktop

Turning Many Applications and Applications from one Desktop
- More than just Java applications
- Easy to add new services at the server without touching the desktop

Reduced Initial Costs:
- Sweeping industry support
- Reduces initial and total cost operating costs
- Enables network computing

Enhanced Network Computing
- New software distribution models
- Enables network computing
- New software distribution models
- Enables network computing
- New software distribution models
Network Computing is a natural choice for deploying Java-based business applications.

- Consistent with Network Computing design philosophy
- Simplicity at the desktop; complexity moves to the network
- Full cost of ownership benefits plus:
  - Central management of applications
  - Distribution and delivery of applications “on demand”
  - Avoid client software installation, configuration, version problems
  - Standard WWW browser
  - PC users still pay associated “fat” client burdens
- Network Computing solutions can be delivered to existing PCs
  - Standard WWW browser
  - 100% Pure Java environment
- Common services for all applications
- Business productivity components

Start programming for the IBM Network Station today with InfoBase technology

IBM Network Station provides scheduling and control

IBM's Desktop Interface for NC users
- Web Browser
- File Manager
- Terminal Emulation
- Presentation Graphics

ATTENTION: The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library
Current technology strategies assume "one-size-fits-all PC"
- Don't want PCs to become obsolete
- PCs not in significant costs for under-utilization
- Optimal technology strategy would align user task to technology platform.

Acquisition is a part of Total Cost of Ownership
- A new class of business productivity software designed for network computing
- Comprehensive set of integrated Java applets
- Common interface - the NO. font attributes, uniform user assistance
- Will be submitted for 100% Pure Java certification
- Initially offered for Network Computer
- Two product lines for different user focus: eStation Workplace for network focus
- eStation Developer for developer focus
- Will be offered non-Network Computer
- Will be submitted for 100% Pure Java certification

Annual Savings Compared to Typical Window 95 LAN PC
- NC's most cost-effective way to provide access to Windows applications
- NetPCs similar to Windows 95 but lower cost than NC's
- Java NC's offer highest degree of flexibility, savings
- 5 yr. savings - 100 client network vs NetPC/Best Windows: $1,958 - $1,959

Attention: The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library
Using 3270-type terminals to train airport agents

- Goal: Move train lug from spatialva regional atlas to airports
- Deploy more than 100 IBM Network Stations with local servers
- Run all transactions making train lug more convenient and reliable
- Expand usage to place terminals at counters, new inventory system

Benefits:
- Better to manage and less expensive to own than PCs
- Small size reduces real estate costs, avoids major counter modification
- Better service and support, easier management of year
- Faster deployment

NIM Network Station

- Manufacturer of more than 700 fine Troll and Mac products
- Using AS/400 linking 165 terminals, 60 PCs, and 10 printers
- Goal: Rely on AS/400 linking and supporting software environment
- Avoid purchase, software expense of purchasing new PCs
- Dynamic allocation of computing vs. PCs, more function than terminals
- Dramatically amplify current software environment
- Use IBM Network Station for AS/400, integrated for swaps
- View area on network stations using AS/400 integrated for swaps

- Simplified software upgrade model
- Ubiquitous Internet access
- Enhanced application deployment speed and flexibility
- Reduced training and support costs
- Increased security
- Applications/data secured on server
- Simplified software upgrade model
- View area on network stations using AS/400 integrated for swaps

- 10-60% estimates
- Without reduction in functionality
- Increased usability
- Reduced training and support costs
- Substantial reduction in total cost of ownership vs. PCs

- Substantial reduction in total cost of ownership vs. PCs
- Increased usability
- Reduced training and support costs
Washington, D.C. area, nonprofit family-run after-school program

Moving from networked PC's to Network Computer

Goal: Launch technology playing field for city and suburban kids

- Onsite IBM Network Station for access, Internet, 'edutainment' CD-ROM
- Teach kids computers, bring technology 'have and have-nots' together

- Lower Initial Cost and ongoing cost of ownership, installed management
- Avoid fees and expense of PC hard disk failure, client software upgrades
- Silent operation, low heat, low energy usage (7 vs. 209 watts)
- Flexibility to connect to variety of servers, data information

- Indium-based construction engineering firm
- Using AS/400, connected terminals, and PCs
- Goal: deploy IBM Network Station in headquarters, other offices

- Benefits
  - Lower cost and low total cost of ownership
  - Low initial cost and low total cost of ownership
  - Provide access with access to AS/400 and PC-based applications, Web

ATTENTION: The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library
A strategic part of the work is computing applications. Application development is a strategic part of the overall process of deploying and managing applications. Enhanced application deployment and management of Web-based applications are necessary to ensure that applications are available and productive. Universal access to multiple servers and networks is ensured through the use of the Java Virtual Machine (JVM) and Java applications. Support for JVM file management is provided, allowing for the deployment of Java applications across different environments. Device independence, server management, and secure desktop environments are essential for the smooth operation of Java applications. Windows support is assured, ensuring compatibility with multiple servers and networks. Secure desktop environments and reduced total cost of ownership are achieved through the use of Universal Access to Information technologies. Continued enhancements include support for desktops, terminal emulation, and browser support. National language support, including DBCS, is also included. SmartCard support for dial-up capability is an additional feature. ATTENTION: The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library.
Dealing With Cross-Border Broadcasting: More Regulations

Thawansak Sukhawun