Operating System Alternatives for Retail

Ellen McCubbin

Microsoft Certified Solution Developer

Certified Lotus Professional Principal

Alan Lipson

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Agenda

- Microsoft
  - ► Standards
  - ► DOS
  - ► Windows 3.1
  - ► Windows 95
  - ► Windows 98
  - ► Windows CE
  - ► Embedded NT
  - ► Windows NT
  - ► Windows 2000

- Other
  - ► Java OS
  - ► Unix and its Variants
  - ► 4690 OS

ActiveStore - Microsoft in Retail

- Microsoft Sponsored Retail "Standard"
- 1999 status
  - ►Charter document approved
  - ►First RBI team completed work
    - – rework needed
  - ►Base System Services released in May 1999
  - ►Position statement with ARTS established
  - ►6 new RBI teams formed
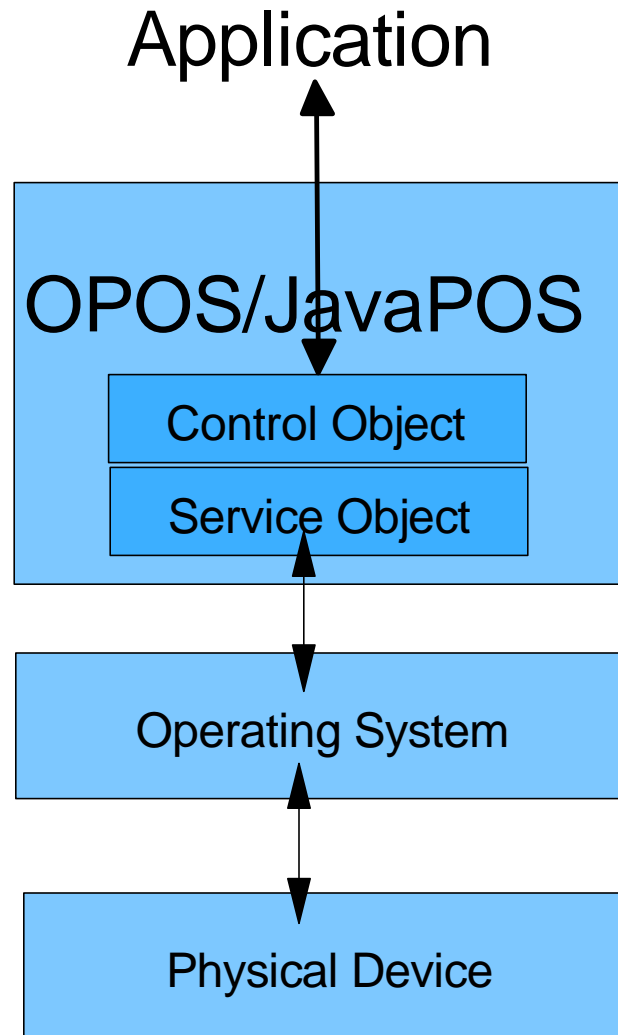 - ►International Team members (UK, Japan)
  - ►Strong European CAB team

Common Device Driver Architecture

Application

OPOS/JavaPOS

Control Object
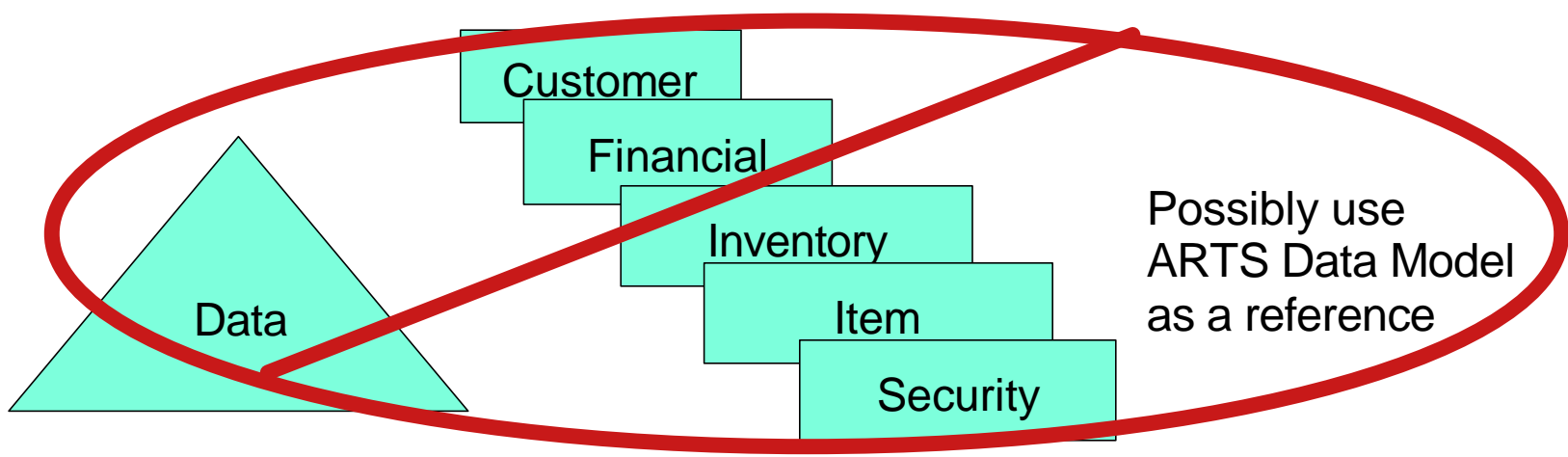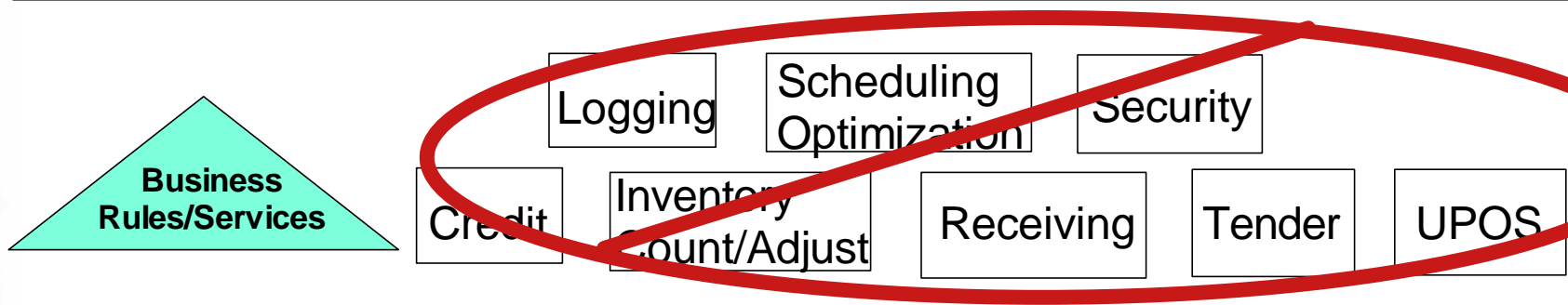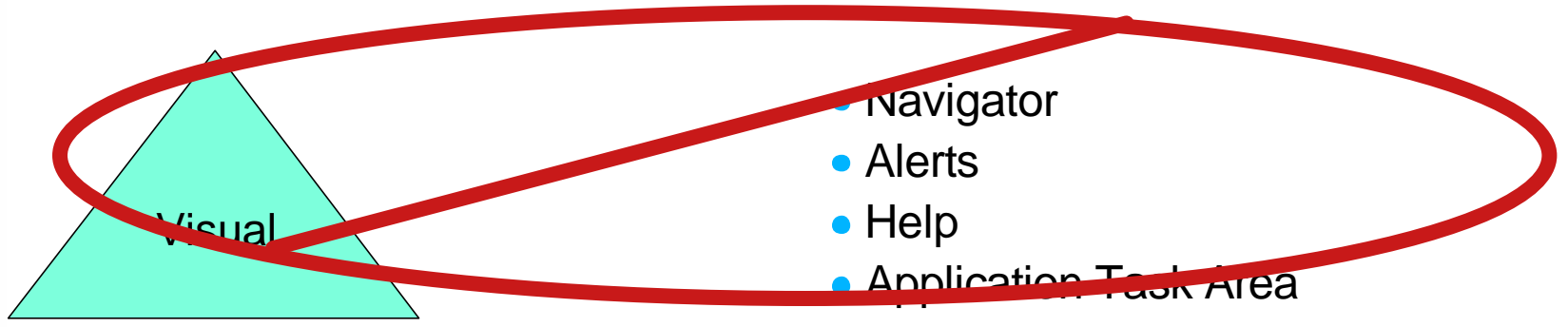
Service Object

Operating System

Physical Device

UnifiedPOS

- Overseen by NRF ARTS Council
- Mission - Produce an application interface standard for peripheral devices that:
  - ►Defines a standard set of behaviors supporting retail usage
  - ►Is operating system independent and language neutral
  - ►Encompasses the OPOS and JavaPOS standards
  - ►International and extends across vendors, platforms, and retail formats
- IBM is providing leadership on this committee

Current Status of Architectural Building Blocks

ActiveStore - System Framework

- Only Windows NT
  - ▶ Released in May, 1999
  - ▶ Plans for CE, Embedded NT, 98 dropped
  - ▶ Will run on Windows 2000, but not certified for Windows 2000
  - ▶ Requires Premier Software Support Contract
  - ▶ No guarantee on how long it will be supported
- Microsoft Consulting not recommending

DOS

- Strengths
  - ▶ robust - handles power hits
  - ▶ mature applications available
  - ▶ minimum hardware requirements
  - ▶ Some Systems Mgmt available
- Weaknesses
  - ▶ single task, non-preemptive
  - ▶ Vendors are not writing new applications
- Retail Segments
  - ▶ Small, 1 store retailers
  - ▶ Fast Food

Windows 3.1

- Strengths
  - ► robust - Handles power hits
  - ► mature applications available
  - ► minimum hardware requirements
  - ► better application development tools than DOS
  - ► Some Systems Management
- Weaknesses
  - ► single task, non-preemptive
  - ► Vendors are not writing new applications
  - ► Microsoft not supporting

Windows 95

- Strengths
  - ► multi-tasking, pre-emptive
  - ► Great development tools
- Weaknesses
  - ► not robust as a network client
  - ► Power hit can corrupt registry
  - ► Microsoft not recommending for POS
  - ► Microsoft Support will be ending for this platform
  - ► Not available for ActiveStore
- Retail Segments
  - ► Food Service
  - ► Single Register Stores

Windows 98

- Strengths
  - multi-tasking, pre-emptive
  - Great development tools
  - More Stable than Win95
  - More robust as a network client
- Weaknesses
  - Power hit can corrupt registry, but registry is more stable than 95
  - Microsoft does not recommend for POS
  - Not available for ActiveStore
- Retail Segments
  - None - yet

Windows NT

- Strengths
  - ► multi-tasking, pre-emptive
  - ► Great development tools
  - ► Robust network
  - ► Many applications being written
  - ► Better Security
  - ► ActiveStore supported

Windows NT

- Weaknesses
  - ► Power hit can corrupt registry
  - ► High level of administration skills required
  - ► OS updates take time and skill to install
    - – can't be done remotely
    - – Significant number of OS fixes
    - – Significant number of Memory Leaks
      - • reboot daily in the store environment
  - ► Fat client -- expensive
  - ► ActiveStore requirements - 128M on the cash register

Windows NT

- ■ Retail Segments
  - ► Tried and failed in Grocery
  - ► Tried and failed in General Merchandise
  - ► Success in some department stores
  - ► Food Service
  - ► Hospitality
  - ► Speciality

Windows 2000

- Strengths
  - Multi-tasking, pre-emptive
  - Great development tools
  - Robust network
  - Registry more stable

Windows 2000

- **Weaknesses**
  - ► High level of administration skills required
  - ► New - not store proven for retail yet
  - ► Fat client -- expensive
  - ► ActiveStore will not be certified for Windows 2000

Windows 2000

- Retail Segments
  - ► Expect Headquarters use of Windows 2000 first
  - ► Expect 2-3Q 2000 testing in retailers labs
  - ► Expect pilots 4Q 2000 in select retailers

IBM and Windows 2000

- IBM Help Centers supported Windows 2000 during beta and ready for GA
- Windows 2000 beta 3 kits at no charge
- IBM has provided Windows 2000 beta 3 drivers and bios updates for the IBM hardware listed on Microsoft's Hardware Compatibility List (HCL).
- New IBM Windows 2000 Solution Center
- Enterprise Services for Microsoft Technologies in Austin, TX

IBM and Windows 2000

- > 300 middleware and software products ready for delivery on the GA date of W2K
- IBM is Microsoft's largest rapid deployment program
- IBM Retail Store Solutions Middleware products and solutions will run on Windows 2000 (Scheduled early 3Q)
- IBM recognized by Microsoft for the extensive committment to Windows 2000

Windows CE

- Strengths
  - Small amount of memory, no disk
  - Fast boot of application
- Weaknesses
  - must recompile and relink all applications
    - Applications may not work
    - Applications must be designed for "thin"
  - All Win applications not supported
  - Not robust - crashes often
  - Not supported by ActiveStore
  - No Systems Management available

Windows CE

- Retail Segments
  - ► Food Service -- limited acceptance
  - ► Trial in small grocery failed
- Competitive
  - ► 4690 is a direct competitor
  - ► NCR is quietly backing off from Windows CE to Embedded NT for its thin client strategy
  - ► Radiant is the only other WinCE application provider for retail (Food Service)

Embedded NT

- Strengths
  - ► small amount of memory, no disk
  - ► Fast application boot
  - ► Systems Management available
- Weaknesses
  - ► Applications must be designed for "thin"
  - ► No Applications available yet
  - ► Not supported by ActiveStore
- Retail Segments
  - ► None yet
  - ► Potential for Food Service, Grocery

JAVA OS

- Strengths
  - ▶ Portability
  - ▶ Thin Client
- Weaknesses
  - ▶ New
  - ▶ Applications just being written -- not mature
  - ▶ Standards -- Sun won't let go

However, not having JAVA OS does not preclude the use of JAVA applications !!

Unix and its variants

- Generally not used at the Point of Sale
- Generally not hacked
- SCO
  - ► Some implementations
  - ► POS Drivers available from SCO
- Linux
  - ► New -- support structure lacking
  - ► Inexpensive
  - ► Fast operating system for an ISP
  - ► Support mechanism for new functionality is missing
  - ► Needs thin client support, data redundancy, and software maintenance
  - ► Needs USB Protocol Support
  - ► Under evaluation by IBM Retail Systems

4690 OS

- Strengths
  - ► Considered best of breed for retail
  - ► Retail Hardened
    - – NVRAM, Server Backup, I/O Device Support included
  - ► multi-tasking, multi-user
  - ► mature applications available
  - ► minimum hardware requirements
  - ► easy to manage updates in the store
  - ► Java Runtime Environment with Thin Client

4690 OS - continued

- ► New applications being developed/ported by partners
  - – ADS - Nextor - developed in Java, runs on 4690
  - – Cornerstone - Foundation ported to 4690
  - – Kyrus JGUI being ported to 4690 native
  - – Others in process of evaluating 4690 as thin client implementation of Java for Retail
- ■ Weaknesses
  - ► Viewed as proprietary OS