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HP World 2001

How to build Mission-Critical Mobile eCommerce Solutions

John Mennel

Vice President Products

Platform Business Unit

724 Solutions

Vision

Powering every mobile transaction where money changes hands

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Who is 724 Solutions?

- **Wireless Transactions – A Global Leader in Delivering Secure, Scalable Mobile Transactions.**

- **Three Tier Architecture delivering:**
  - —*Applications* – pre-defined wireless applications for banking, brokerage, m-commerce, alerts, and aggregation.
  - —*Framework* – unique development environment providing tools and services for building & customizing wireless applications.
  - —*Platform* – the industry's leading Wireless Internet Platform providing security and scalability for mission critical mobile transactional applications and services.

- **HP Partnership – strong relationship with H-P with leading product support for:**
  - —HP UX 11i
  - —HP VirtualVault
  - —HP OpenView

Meeting the Demand & Requirements of Mission Critical Wireless Applications

- **Device & Channel Management**
  - —Leading Platform designed to function independent of network, device, and protocol – reducing application deployment complexity.
  - —Enterprises and Carriers can quickly add support for new devices and quickly introduce new, value-added mobile services such as push and Voice.
- **Application Development**
  - —Unique development environment for building and customizing wireless applications and extending business logic for wireless access.
  - —Framework for extending presentation logic to various internet –ready devices using a device independent mark-up language.
- **Data acquisition**
  - —Connectivity and interoperability with web-based applications, application servers, and content providers.

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Meeting the Demand & Requirements of Mission Critical Wireless Applications

- **Security**
  - —Wired and wireless security requirements including SSL and WTLS.
  - —Multi-device encryption algorithms including RSA, Diffie-Helman, and Elliptical Curve.
  - —Support for wired and wireless Public Key Infrastructure (PKI).
- **Management and Reporting**
  - —Configuration and management of the Platform from EMS console.
  - —Integrated reporting capabilities to track wireless usage and end-user statistics.
- **Push**
  - —Personalized advanced notification based on unique user preferences.
  - —Best channel delivery mechanism.

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Meeting the Demand & Requirements of Mission Critical Wireless Applications

- **General system robustness**
  - —Provide the scalability to support high-volume wireless users by extending, rather than replacing existing web-based applications and systems.
- **Protocol Independence**
  - —Solutions that function independently of protocol: HTTP, WAP, SMS, etc. as a natural extension of existing applications.

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Demonstration

- **This section will demonstrate a wireless application outlining the following characteristics:**
  - —Presentation logic.
  - —Application functionality: personalization, menu selections, data access, etc.
  - —Push capability.
  - —Transcoding.
  - —Voice integration – multi-modal access.

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Device and Channel Management

- **Device form factor**
  - —Each device is unique in its ability to render content.
  - —Solutions must reduce the complexity of content presentation .
- **Mark-up**
  - —HTML, WML, cHTML, XML.
  - —Device Independent Mark-up Language.
- **Channels**
  - —Integrated channel access including: PC, mobile handset (WAP, iMode), iTV, Voice – each channel has unique requirements.
- **Language**
  - —Support for multiple spoke languages.
  - —Support for international data characters.
- **Multi-modal**
  - —Speak data in and see data output.
  - —Access data systems through different channel and have the same consistent experience.

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How is this achieved?

- **DIML**
  - —purpose is to include enough information about the presentation along with the data to be presented so that an adaptor can effectively present the data on a particular device type.
  - —at 'design-time' business data sources are combined with presentation attributes to generate a 'run-time' presentation application.
  - —at 'run-time' this application gathers data from the sources and uses the presentation rules to generate DIML which is sent to device adaptors for subsequent rendering to devices.
  - —allows 'write-once', 'show-anywhere‘.
  - —allows business logic to be separated from presentation logic.
  - —faster time to market.

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Lab – Device Independence

This section provides an unique look into writing next generation applications with the ability to write once, run anywhere.

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Application Development

- **Separate business logic from presentation logic.**
- **Services**
  - —PKI.
  - —Rules based data and function access control (PMI).
  - —Extendible user data storage.
  - —Extendible logging.
  - —Configurable, rules based caching.
  - —Device profile.
  - —Session management.
- **Consistent interfaces to data sources and business applications.**
- **Use standard IDEs.**

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Lab – Wireless Application Development

This section illustrates the fundamentals of developing applications to be resilient of network and devices nuances.

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Data Acquisition

- **Web site**
  - —Leverage dynamic content generation techniques.
- **DB – direct / native connectivity for**
  - —Subscriber management and personalization.
  - —Performance.
- **Application Server**
  - —Extend application business logic to support new mobile devices and channels.
  - —Tight integration with application server for optimal session/state management, performance, and data integrity.
- **Legacy TP monitor**
  - —Extend functionality of existing transactional processes to ensure data integrity and validity.

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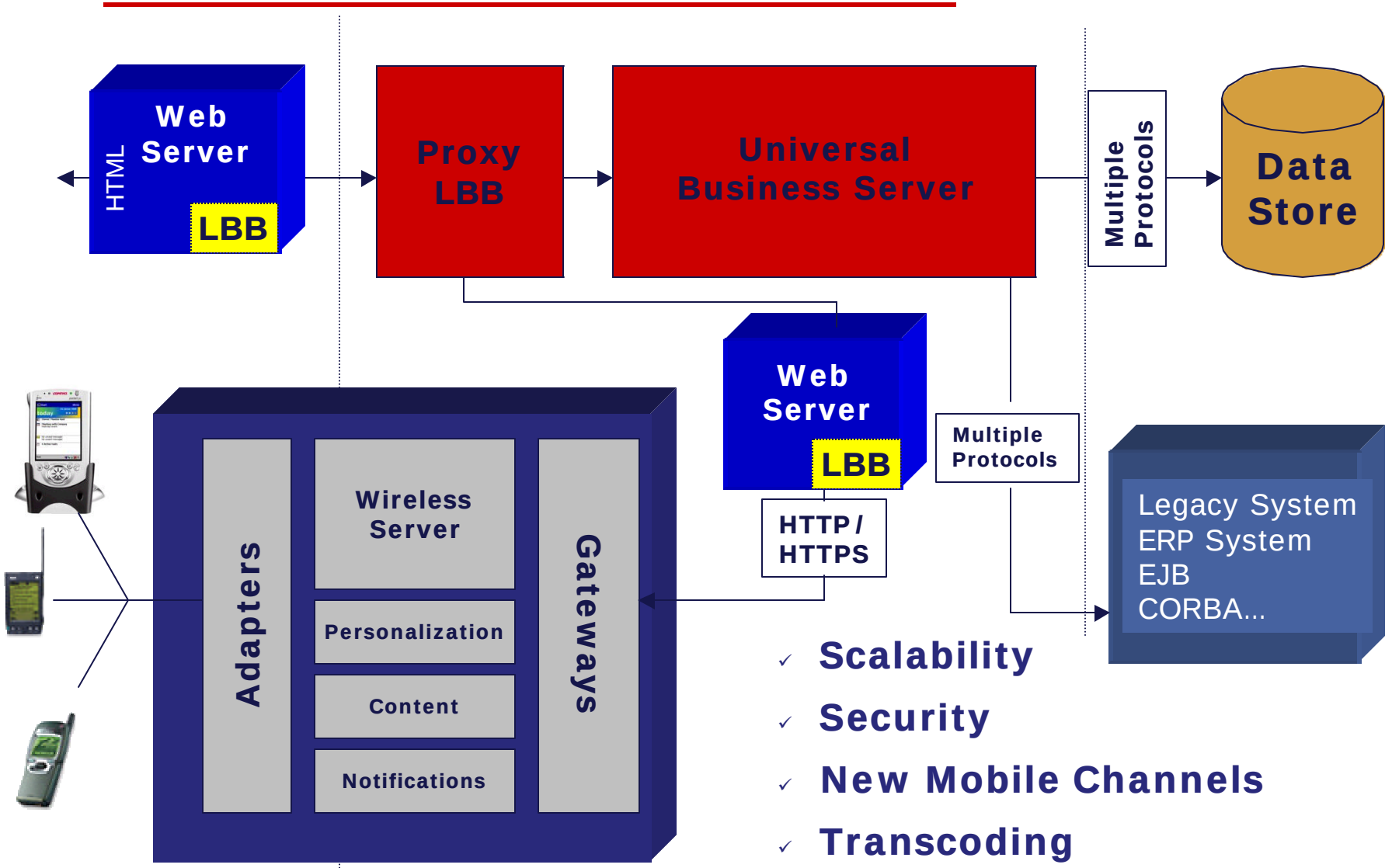
Bluestone & Wireless Internet Platform Integration



- ✓ Scalability
- ✓ Security
- ✓ New Mobile Channels
- ✓ Transcoding
- ✓ Voice

LAB – Transcoding Tool

This section illustrates how existing HTML sites can be optimally converted to WML to render presentation logic to multiple devices.

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Security

- **Policy Management Infrastructure (PMI)**
  - —Used to manage entitlements and enforce policies for access control according to business rules and object permission attributes.
- **Contract Management**
  - —Allows applications to specify the content and format of contracts to be digitally signed.
- **Secure Transaction Processor**
  - —Verifies XMLDSig and PKCS #7 formatted signatures.
- **Policy Management API**
  - —MPA, Business Logic, DI presentation.

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Security

- **Authentication API**
  - —Support for Digital Signatures and Basic (user id and password) authentication.
  - —Delegated Authentication.
  - —Voice authentication.
- **Gateways (WAP)**
  - —Application must work with the carrier WAP gateway, provide an enterprise gateway or support both using gateway redirect (allows a carrier gateway to re-direct a WAP session to an enterprise gateway at the request of the enterprise gateway).
- **PKI ease of use**
  - —Demonstration with Cloakware and Neomar at RSA 2001 conference demonstrates digital transactions signed with a hand-written signature.
- **HP Virtualvault Integration**
  - —Certification of Wireless Internet Platform version 3.0 on HP Virtualvault 4.0.

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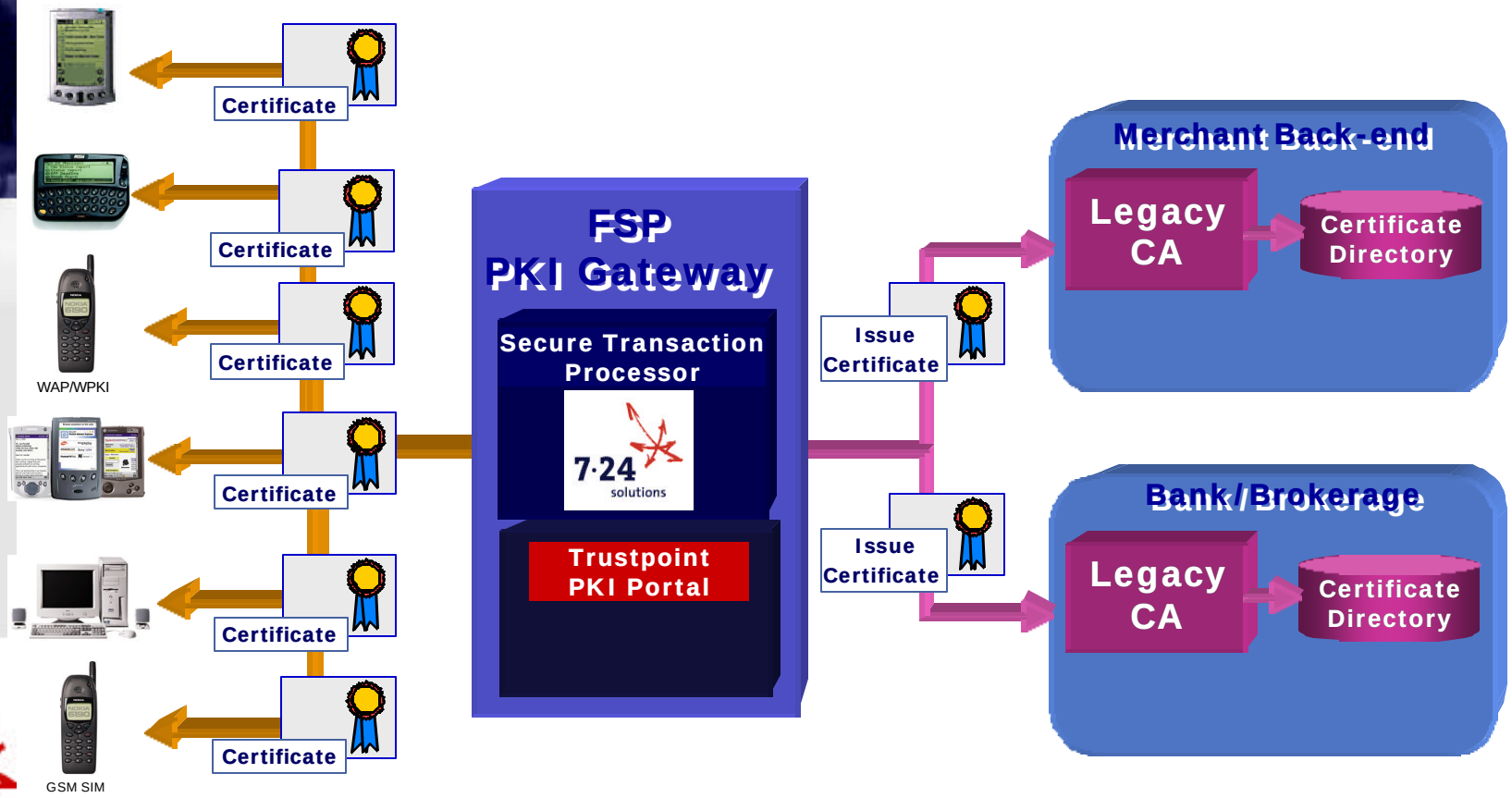
PKI Gateway - Overview



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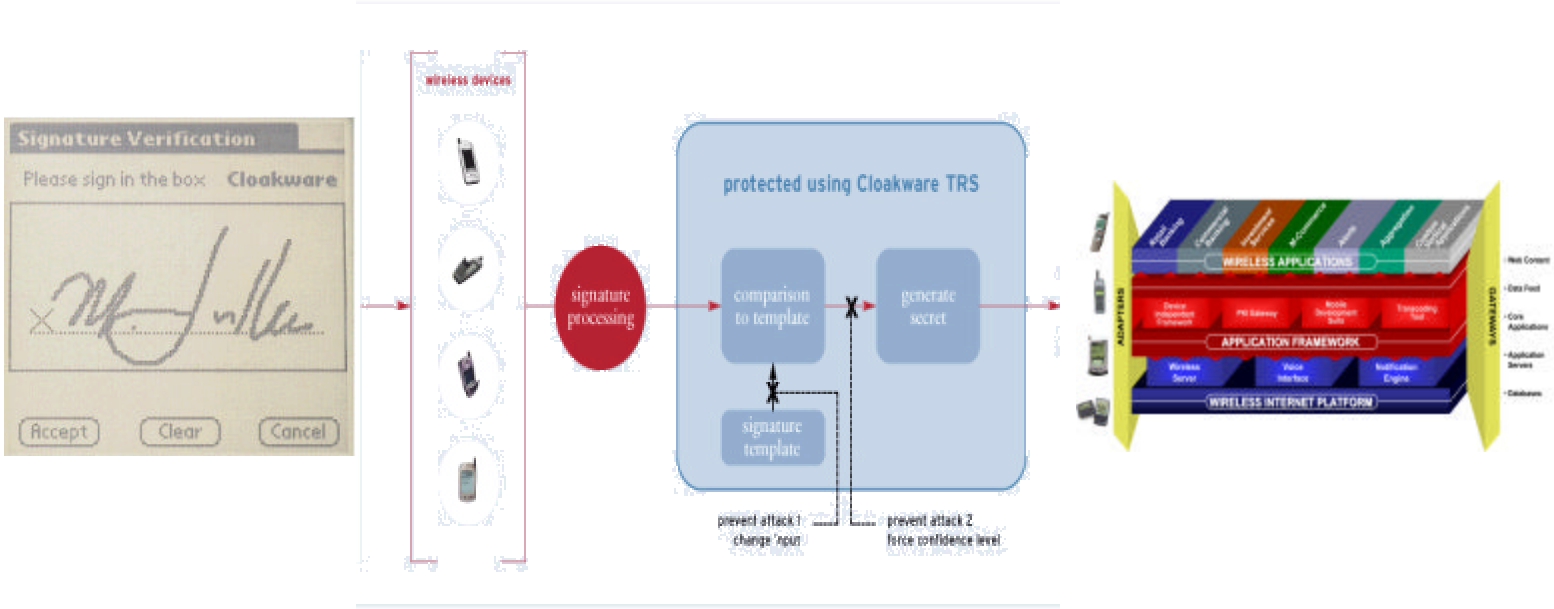
Key Technology Investigations

Stylus-based signing Demonstration



- User signs her name on any device that supports stylus input for authentication and digital signing.
- The Cloakware client compares the signature to templates based on angles, pressure applied, etc. It unlocks the private key and signs the transaction.
- PKI Gateway validates the signature and interfaces with the application.
- Benefits are ease of use and better security – signatures are harder to share, fake, forget or lose than passwords.

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LAB – PKI Ease of Use

- This section illustrates the simplicity of using Wireless PKI solutions.

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Management and Reporting

- **SNMP**
  - —Alerts
    - All alerts reported as SNMP traps for Enterprise Systems Management (ESM) integration.

- **Reporting**
  - —Data is captured and represented in CLF or ELF format (Common Log Format or Extended Log Format - well known formats defined by the w3c).
  - —Reports can be used to measure and log system activity and to monitor number of interactions.
  - —Meter file captures system component(s).

- **Central point of management**
  - —Easily configure distributed systems for optimum performance.

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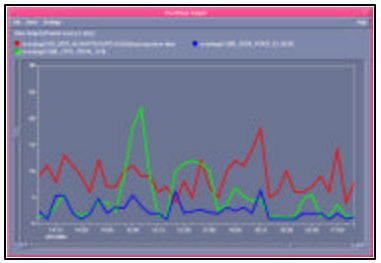
HP OpenView VantagePoint Solution for the Wireless Platform

- **OpenView SPI for 724 Solutions provides**
  - **Centralized management instrumentation for Wireless Platform** – OV auto-discovers platform network topology and develops service views.
  - **Integrated availability and events management** – OV provides a level of intelligence on top of Wireless Platform alerts; provides a graphical view of Wireless Platform status.
  - **Performance Management** - key platform performance metrics fed into OV performance infrastructure (i.e. HTTP, WAP, LDAP, XSL, Dispatcher).

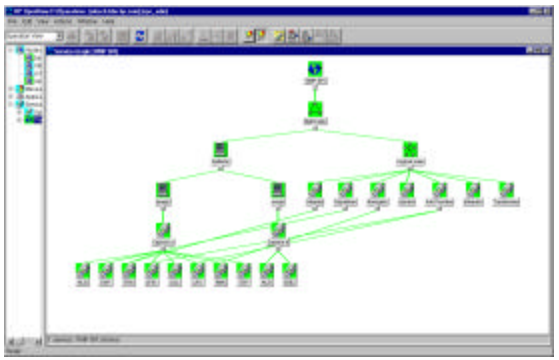
- **Availability of Wireless Internet Platform Smart Plugin**
  - SPI available through HP.
  - Necessary integration points exist in the Wireless Internet Platform.
  - Pricing of SPI available from HP.

HP OpenView VantagePoint Solution for the Wireless Platform

VP Performance



VP Service Navigator

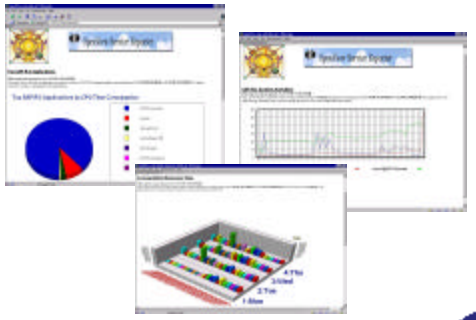


Service Views

Trending and Reporting

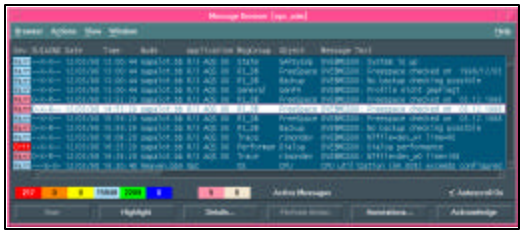
OV VP Management Server with WIP Smart Plug-In

Problem Management



Data

Policies & Actions



Wireless Internet Platform Environment

VP Reporter

VP Operations

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Push Service Requirements

- **Channel independent XML**
- **API**
  - —Covers North American protocols
  - —Covers EMEA & APAC protocols
  - —Offers carrier – connectivity option
    - SLA
    - Management
  - —Alerts generation

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Push Service Requirements

- **Mobile Internet requires mechanism for delivery of pushed messages**
  - Mobile devices are always present and always on.
  - Push infrastructure must be able to select best available channel for device and network.
  - Push infrastructure must support delivery notifications.
- **Notification Engine provides**
  - Message submission – assign channel and destination based on user name; break apart multiple messages.
  - Delivery – delivery via WAP push, SMS and SMTP; queue and retry if channel is not open.
  - Result notification – provide result notification to the application for WAP Push and SMS.

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Notification – Delivery Channels

- **WAP Push**
  - Push a WAP card including a link or graphic.
  - Pushes an invitation for the user to connect to a WAP session.
  - Available with WAP 1.2 phones.
- **SMS Push**
  - Generally very good performance and availability.
  - Supports results notification.
  - Enterprise generally connects to one subscriber for all carriers.
  - Supported by most GSM phones.
- **SMTP**
  - Used by North American carriers to access SMS centers.
  - Supported by virtually all digital phones in NA.
  - Performance also usually quite good (<1 min).

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General Robustness

- **Scalability & failover**
  - —Meet demands of high volume wireless subscribers.
  - —Meet demands of high volume messaging.
- **Application session reconnect**
  - —Build applications that are resilient to network and device nuances.
  - —Provide a resume transaction mechanism.
- **Benchmark on HP HW**
  - —Tested to 100,000 concurrent users.
  - —High volume transaction applications.

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Technology Value Proposition

- **Security – meets device and network requirements.**
- **High volume message switching and scalability tested to 10 million users:**
  - —Component Replication – linear scale.
  - —Load balancing and fail-over to ensure availability.
- **Modular and component based architecture for customization and integration with existing e-business applications and systems.**
- **Future proof design to easily support next generation devices, protocols, and networks.**
- **Management and Configuration.**

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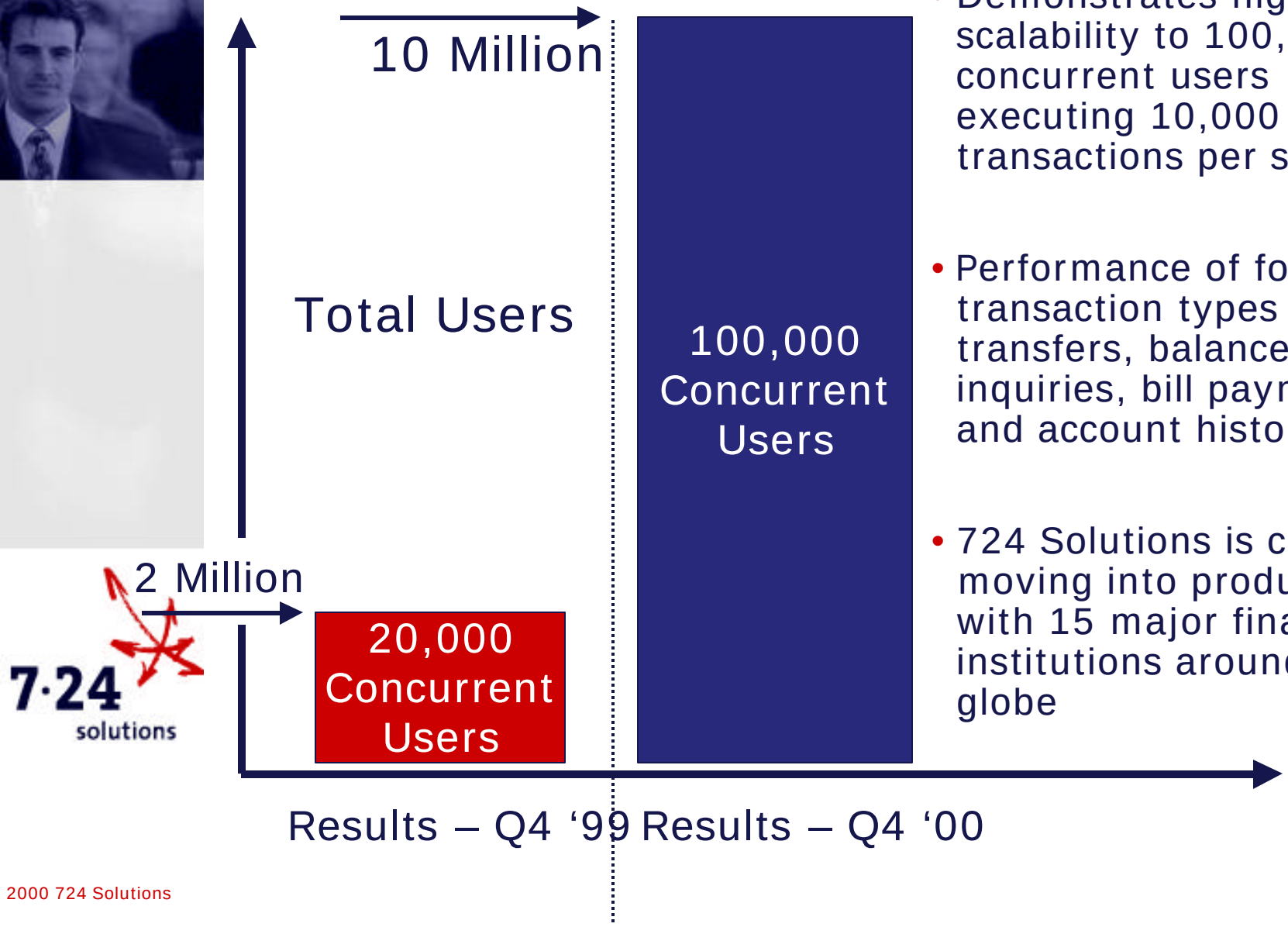
Performance Test Results



- Demonstrates high scalability to 100,000 concurrent users executing 10,000 transactions per second
- Performance of four transaction types (funds transfers, balance inquiries, bill payment and account history)
- 724 Solutions is currently moving into production with 15 major financial institutions around the globe

Meeting the Demand & Requirements of Mission Critical Wireless Applications

- Device & Channel Management
- Application Development
- Data Acquisition
- Security
- Management and Reporting
- Push
- General System Robustness
- Protocol Independence

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