Wireless Devices in Retail

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The Concept

- Wireless Networks
- Personal Shopping Assistants (PSAs)
- Brick and Mortar Retail (IKEA)
Agenda

• Possibilities
• Constraints
• Customer behavior
• Design considerations and decisions
• Network options & solutions
• Designing the device
The Possibilities are Endless

PSAs and their wireless networks can:
• Scan for price and product info
• Personalize marketing
• Maintain shopping lists
• Product/customer locator
• Expedite check-out
• Audio input/output
Constraints

There’s always a catch:

- Securing the wireless network/device auth.
- Hardware limitations
- Connection degradation
- Competing ambient noise and light
Customer Behavior

What shoppers want:
- Mobility & use of hands
- Knowledge, control and convenience
- Less shotgun marketing; personalization
- Expedited check-out
Considerations

Things to think about before you design:

- Secure connection of the wireless network between the server and PSA; authentication
- Which data transfers should be encrypted
- Screen display and user interface (UI)
- Functionality in device vs. server
Network Options & Solutions

• Web tunneling
  – Firewall/proxy server
  – Data exchange between outside WS and device via SSL
Security

- Synchronized frequency hopping
- PKI server-device authentication
- Symmetric key encryption
- Key manager

Original Message consists of server authentication information or symmetric key pair.
Designing the Network

- Store Server
  - Customer DB
  - Product DB
- Application Server
- Connection Manager
- Proxy Server/Router
- AP

Diagram showing network architecture with various servers and components.
Designing the Device

- mic
- Hibernate Arrow keys
- IKEA.com
- Power
- Customer Log In
- Locate Product
- Product Info.
- Store Services

Welcome to Woodbridge
IKEA Wed April, 27th
60°

Hide Welcome

Customer Log In
Locate Product
Product Info.
Store Services

IKEA.com

Power

Arrow keys

Hibernate
Designing the Device

Customer Log-in
- Scan Customer Card
- Enter Customer ID
- Enter Customer Name
- Search Customer Name
- New Customer
- Home
- Enter new cust info.
- Welcome Customer Name
- <targeting marketing>
In Conclusion

The end result is a customer that has more control, knowledge and convenience in her shopping experience.