

# Device Management Landscape

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# What is Wireless Device Management?

## Wireless Device Management

- Consists of all operations that are required to manage a wireless / mobile device
- Includes capabilities to configure, monitor, update devices for the users and/or by the users
- Enables operators to ensure device performance, simplicity, security and overall service quality

## Relationships

- Device Management is a collection of several enabling blocks, i.e. a collection of several technologies,

However,

- Device Management is also part of several other systems that are internal to as well as external to the wireless operator

# Value Proposition of DM to Operators

- **Increase Revenue from new services**
- **Reduce Time to Revenue**
- **Reduce Cost of Customer Care**
- **Increase Customer Satisfaction and Decrease Churn**

# Key Objectives for DM

- **Enable new services on the mobile device**
- **Ensure simplified activation and correct provisioning of the devices OTA**
- **Enhance operators' quality of service levels through monitoring, troubleshooting, etc**
- **Enable cost savings in problem resolution, customer care, etc**
- **Enhance security privacy, spam / virus protections**
- **Secure the content of devices against theft or accidental loss, through back-up / replication**

# DM Entities to Manage

- **SIM / USIM**
- **Device Firmware**
- **OS / App Environment**
- **Apps / Services**
- **Device / Service Parameters**
- **Content**
- **Addresses**
- **Security**

# Key Technologies for DM

- **Client – Server models**
- **Over-the-Air (OTA)**
- **Replication / Back-up / Synchronization**
- **Sim / USIM Tool Kits**
- **Biometrics**
- **Digital certificates**
- **Digital Rights Management (DRM)**
- **Mobile Agents**
- **Java Management Capabilities**
- **Trusted and Un-trusted Applications**

# Implication of Other Trends

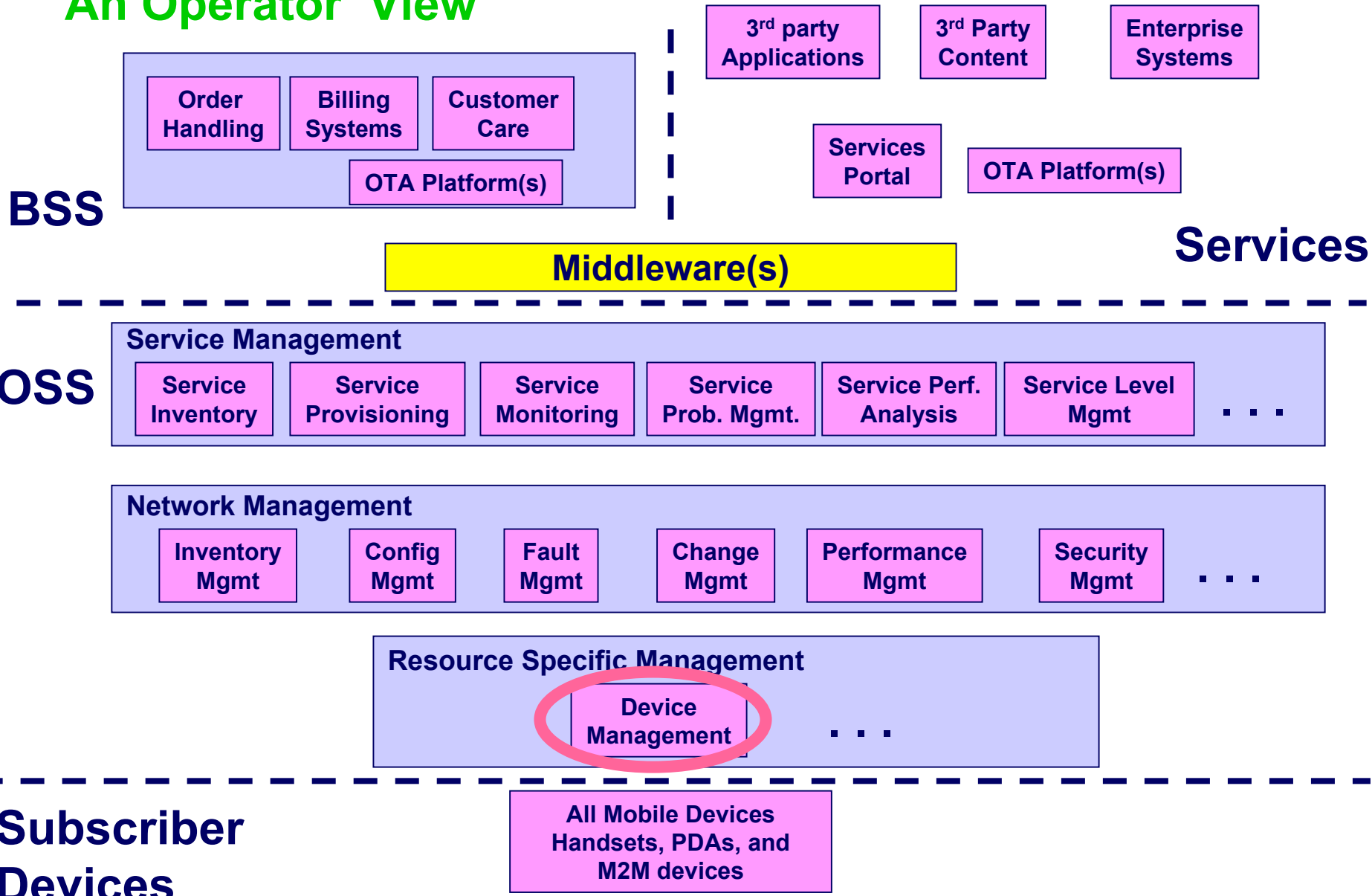
- **SIP / IP stacks in Devices**
- **GPS / location based services / capabilities**
- **Presence methodologies**
- **High penetration of multimedia handsets**

# Key Building Blocks for DM

- **Device Configuration / provisioning**
- **Service Configuration / provisioning**
- **Firmware updates / upgrades**
- **Software updates / upgrades**
- **SIM / USIM management**
- **Customer Care**
- **Performance / SLA management**
- **Device data replication / backup / synchronization**
- **Digital Rights Management**
- **Spam Control**
- **Security**

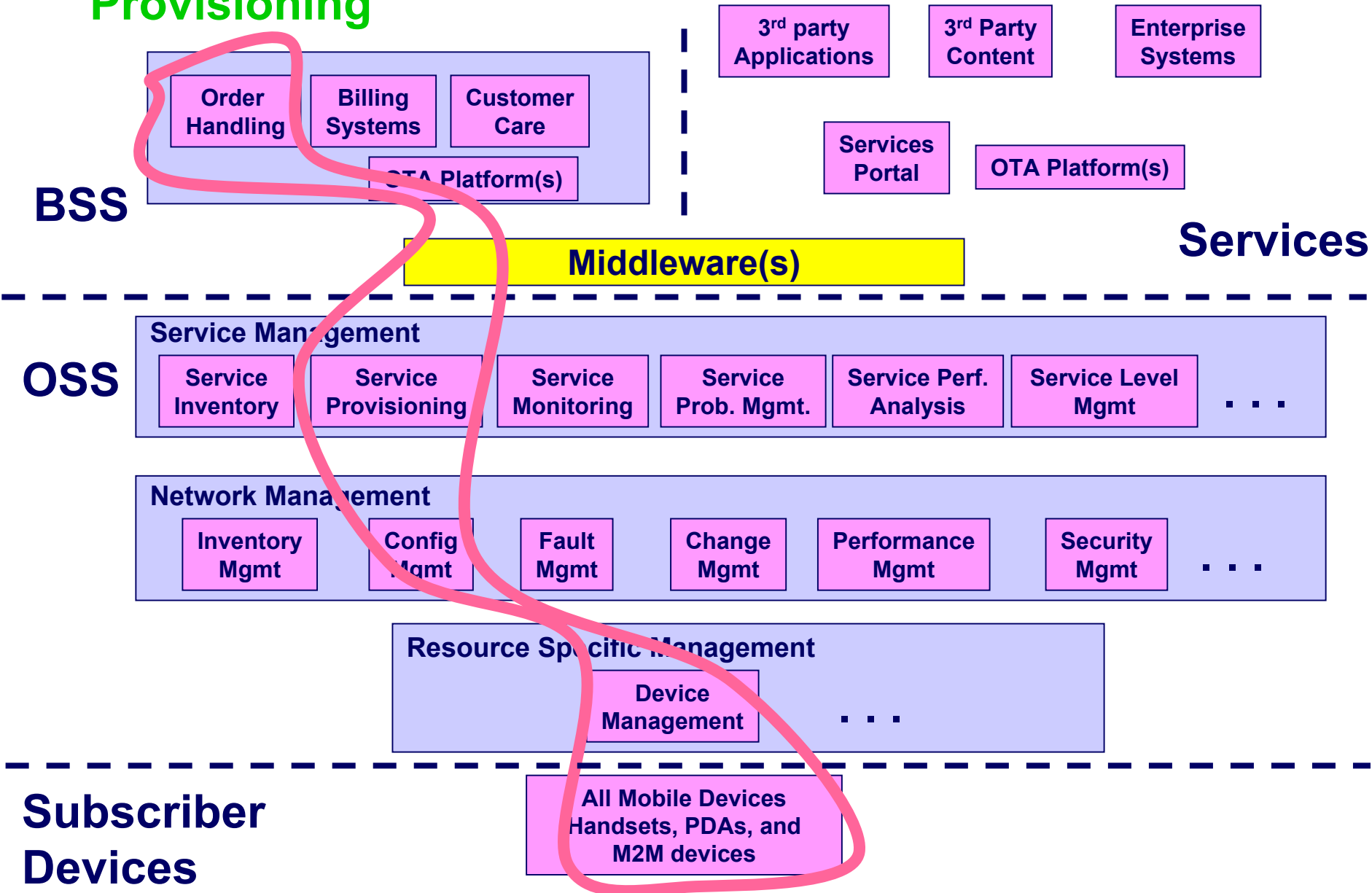
# Device Management Architecture –

## An Operator' View

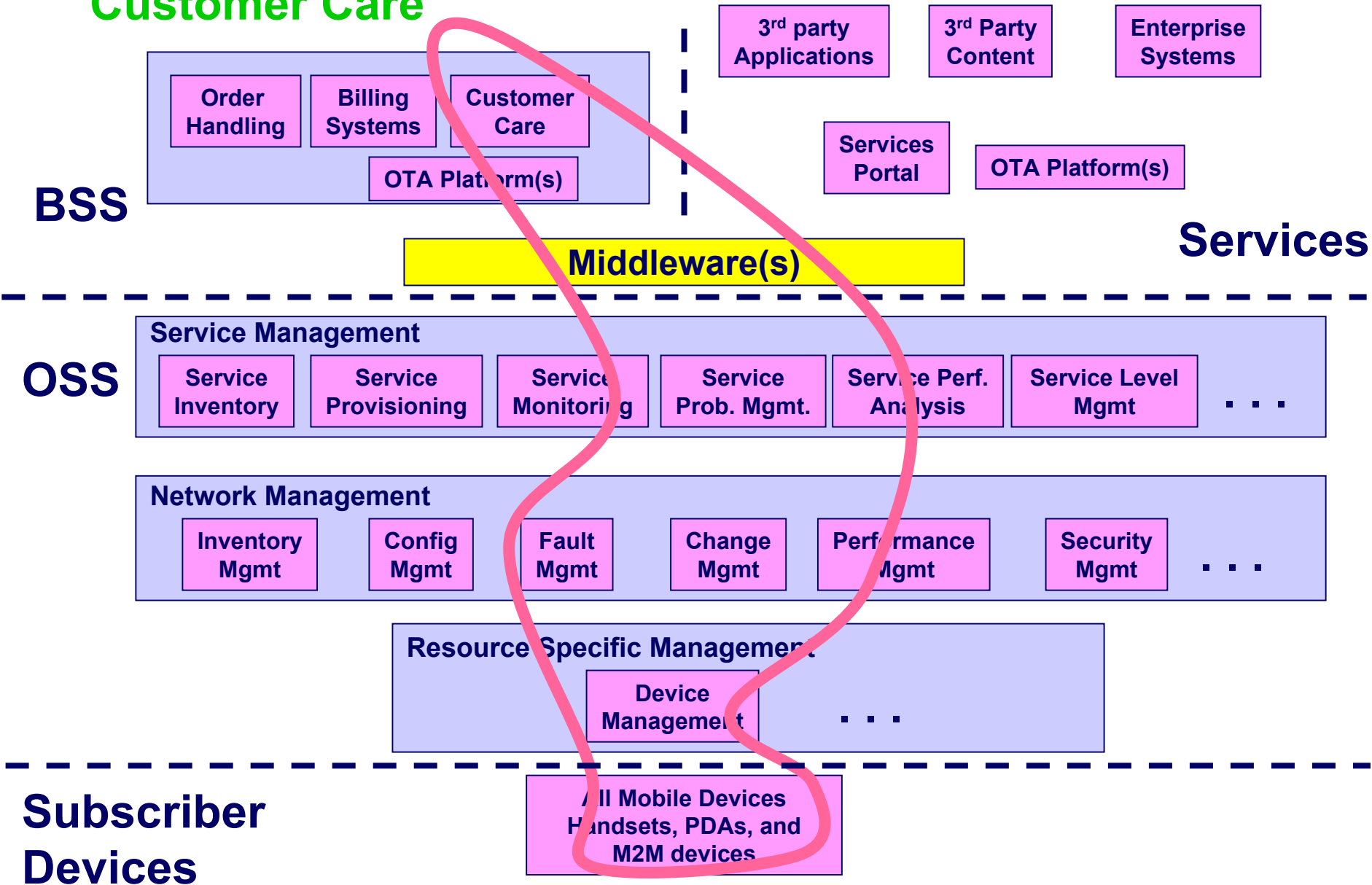


# Device Management Architecture –

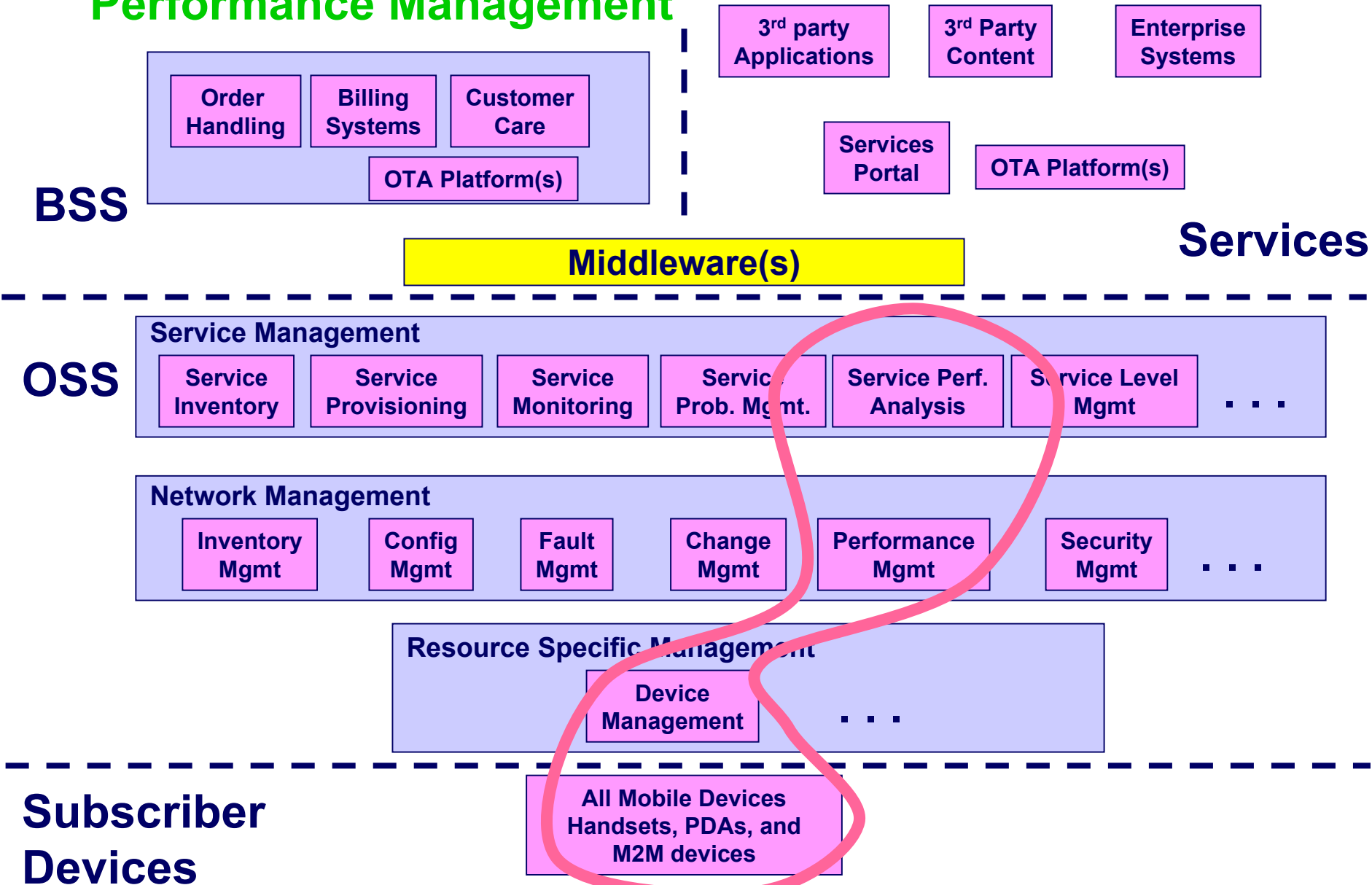
## Provisioning



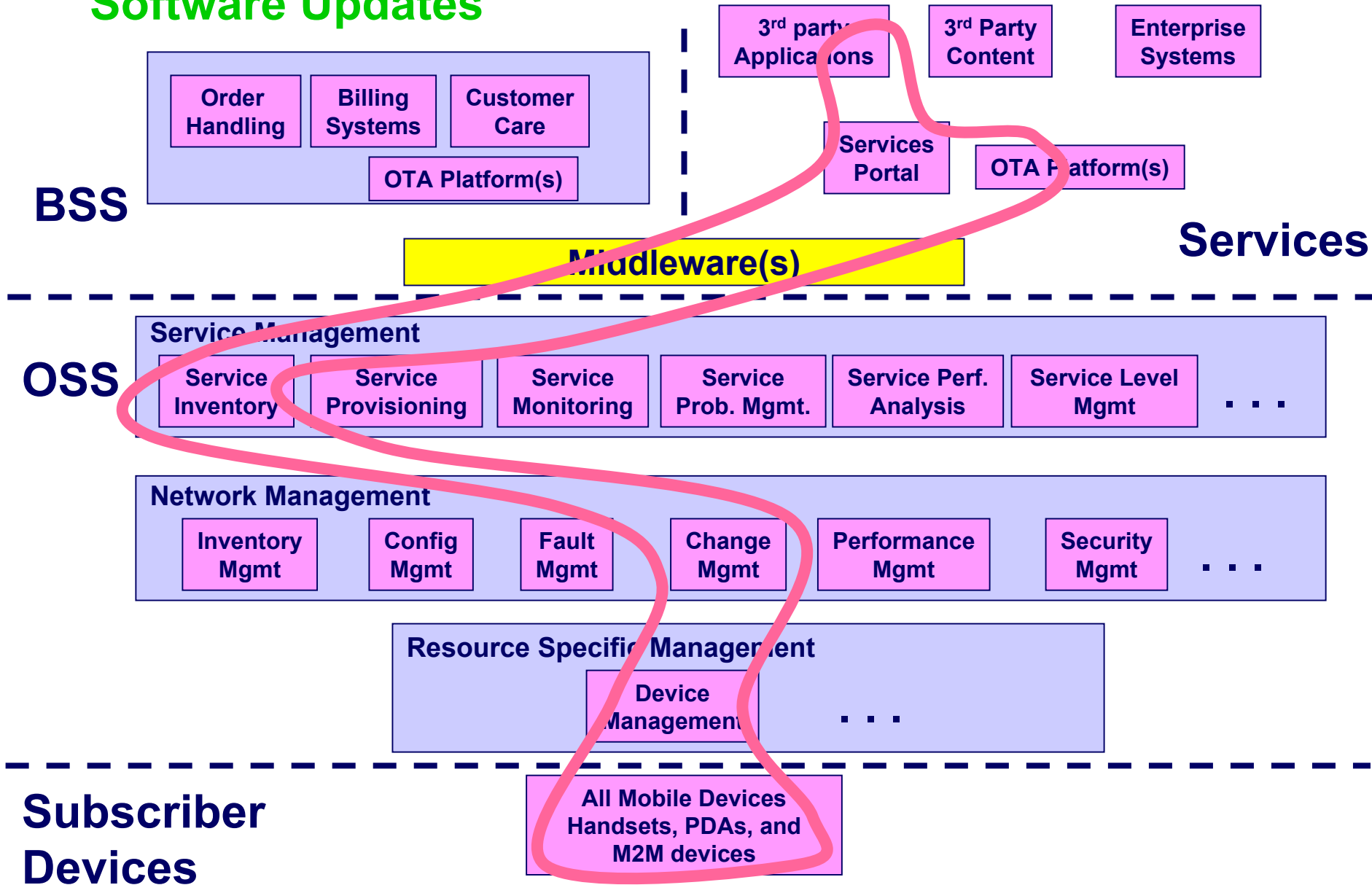
# Device Management Architecture – Customer Care



# Device Management Architecture – Performance Management



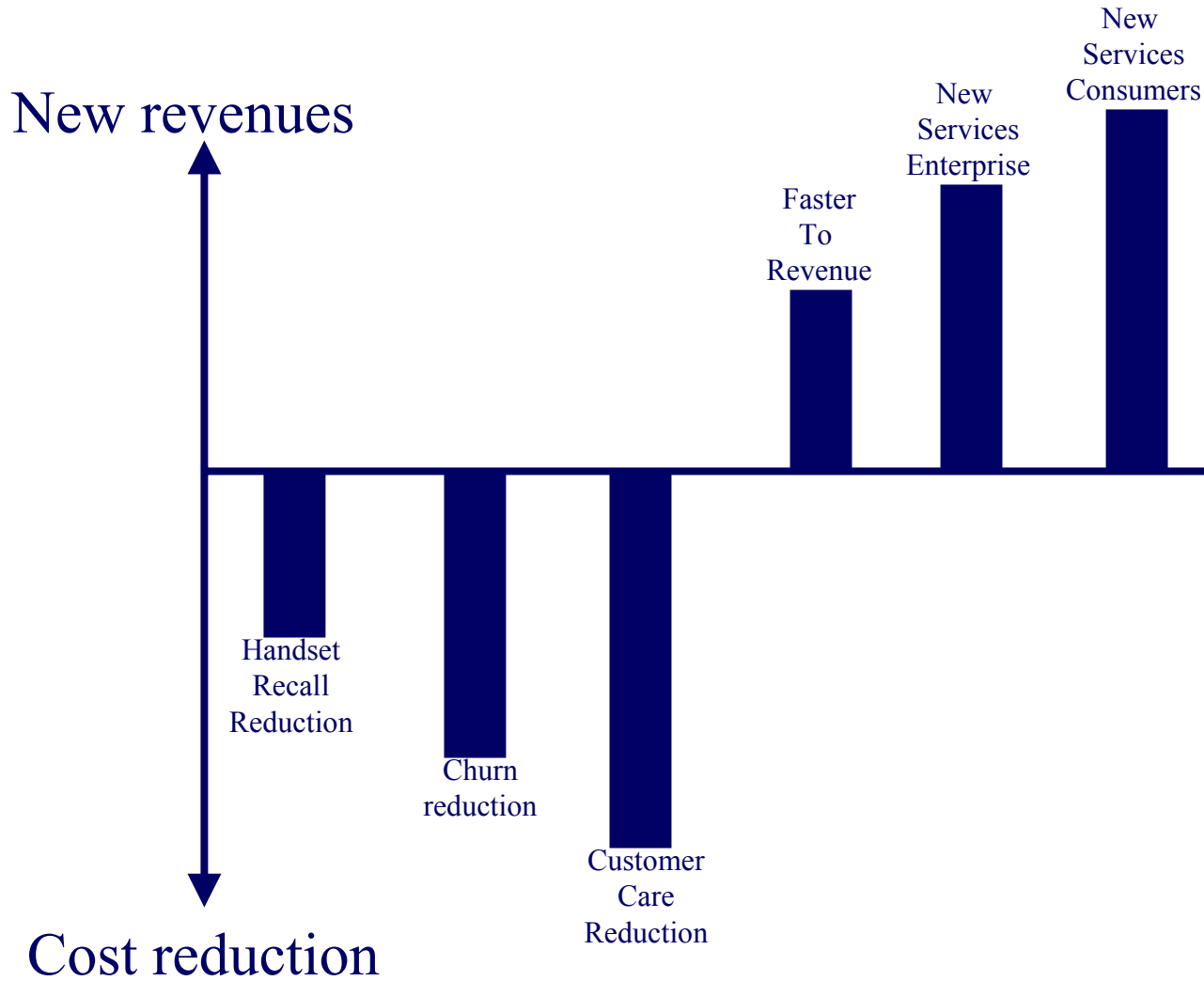
# Device Management Architecture – Software Updates



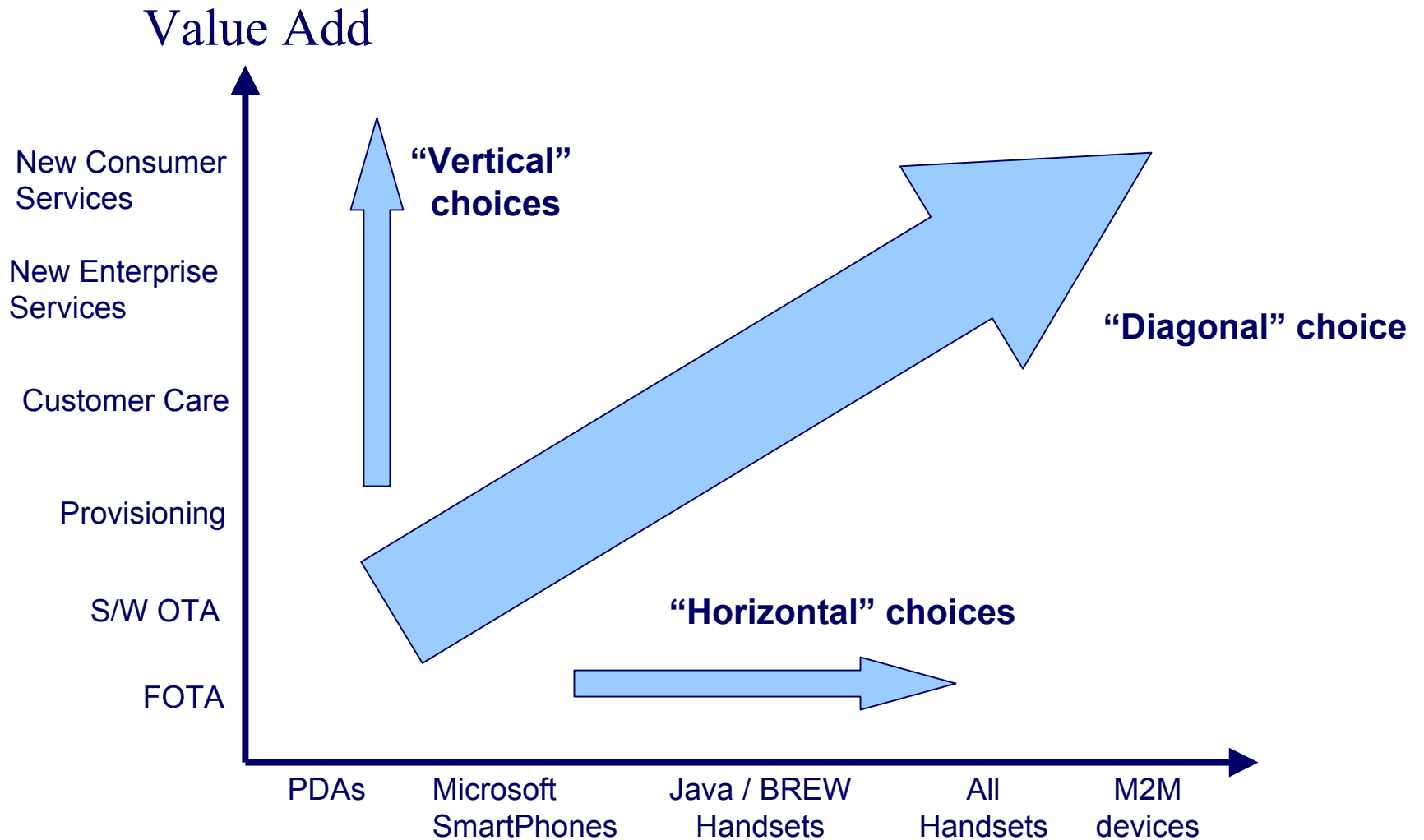
# High-Level Value Proposition of DM

- **Launch Services Faster**
  - Pre-configure handset
  - Simplify user and service provisioning
  - Faster time to service revenues
- **Reduce Support Cost**
  - Reduce / eliminate handset recall costs
  - Reduce customer care and problem resolution costs
  - Eliminate security violations, viruses, etc
  - Reduce churn; reduce device subsidy costs (?)
- **Generate New Revenues**
  - New revenues from consumers such as
    - Data backup; content delivery; spam protection; etc
  - New revenues from Enterprises
    - Device management
  - Revenues from manufacturers
    - Device warranties

# DM Value Proposition



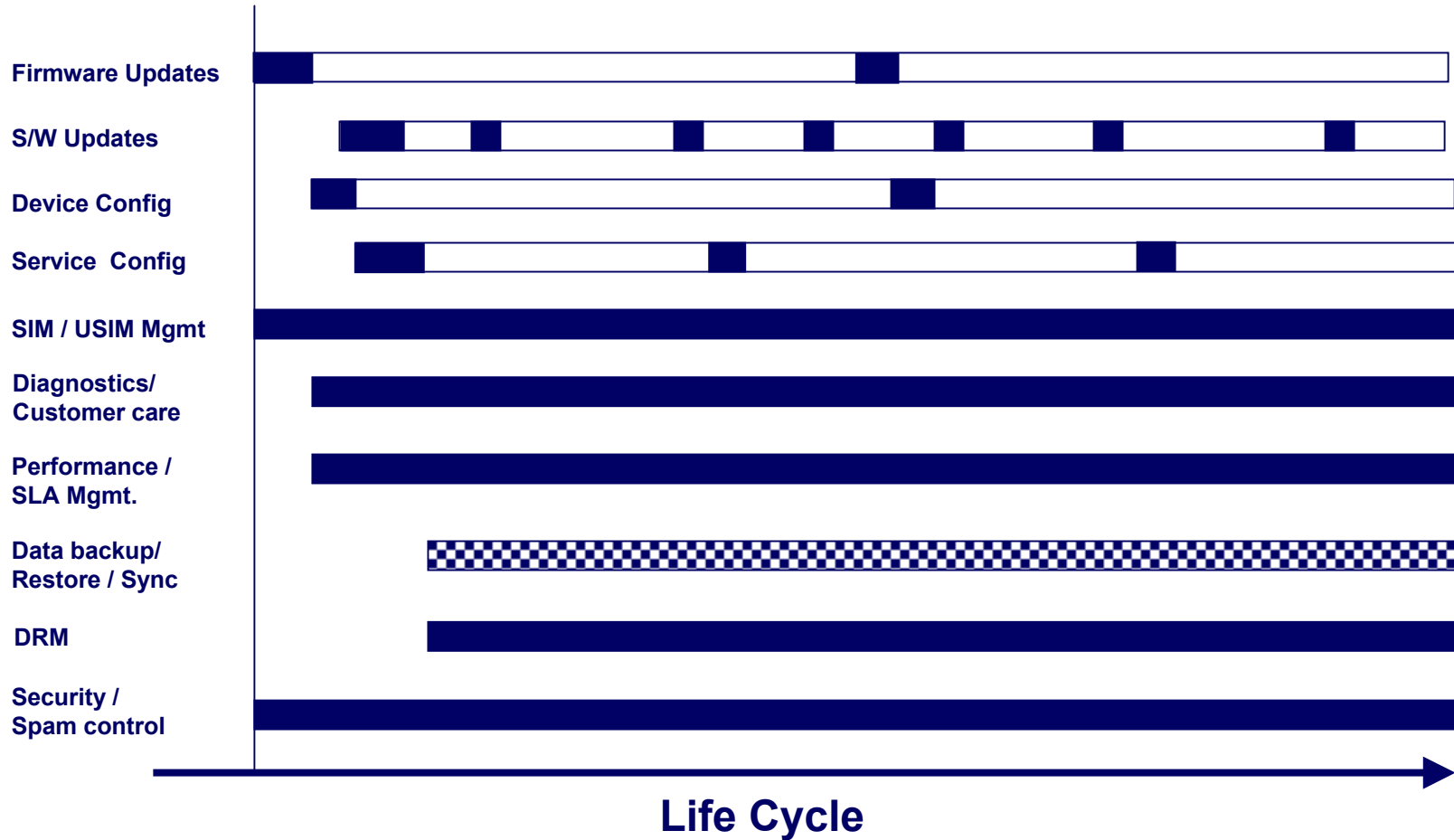
# Definition / Positioning of DM



# Ultimate/End Users/Customers for DM

- **Mobile Subscribers**
  - These are the ones that need to be “delighted”, not just “satisfied” with the overall service
  - DM is an enabler for these customers to be “delighted”
- **Enterprise IT Departments**
  - Need to fulfill their corporate goals, such as cost containment, security, inventory, efficiency, etc
- **Application Developers**
  - Right provisioning, activation, S/W OTA, DRM, security
- **Operators OSS Personnel**
  - Device / service provisioning, performance mgmt., security
- **Customer Care Agents**
  - Access to device parameters, performance mgmt., S/W OTA

# Device “Life Cycle” Management



# User Device Self Management

- **Self Help Functions**
  - **Service Provisioning / Service Activation**
  - **Fault Management**
  - **Performance Management**
  - **Customer care**
  - **Backup / Synchronization**
  - **Security**
- **Methodologies**
  - **Operator Server / Web Portal**
  - **Device based capabilities**
  - **Texting**

# Enterprise Device Management

- **Real-time performance monitoring and availability management**
- **Diagnose and repair devices & resolve service problems over-the-air and in real-time**
- **Device configurations, software updates and change management**
- **Asset management**
- **Enforce company security policies**
- **Remotely lock or erase content if devices are lost or stolen**