

Confidential



DoOnGo Technologies

# Mobile Intelligence™

*8/15 IEEE Presentation*

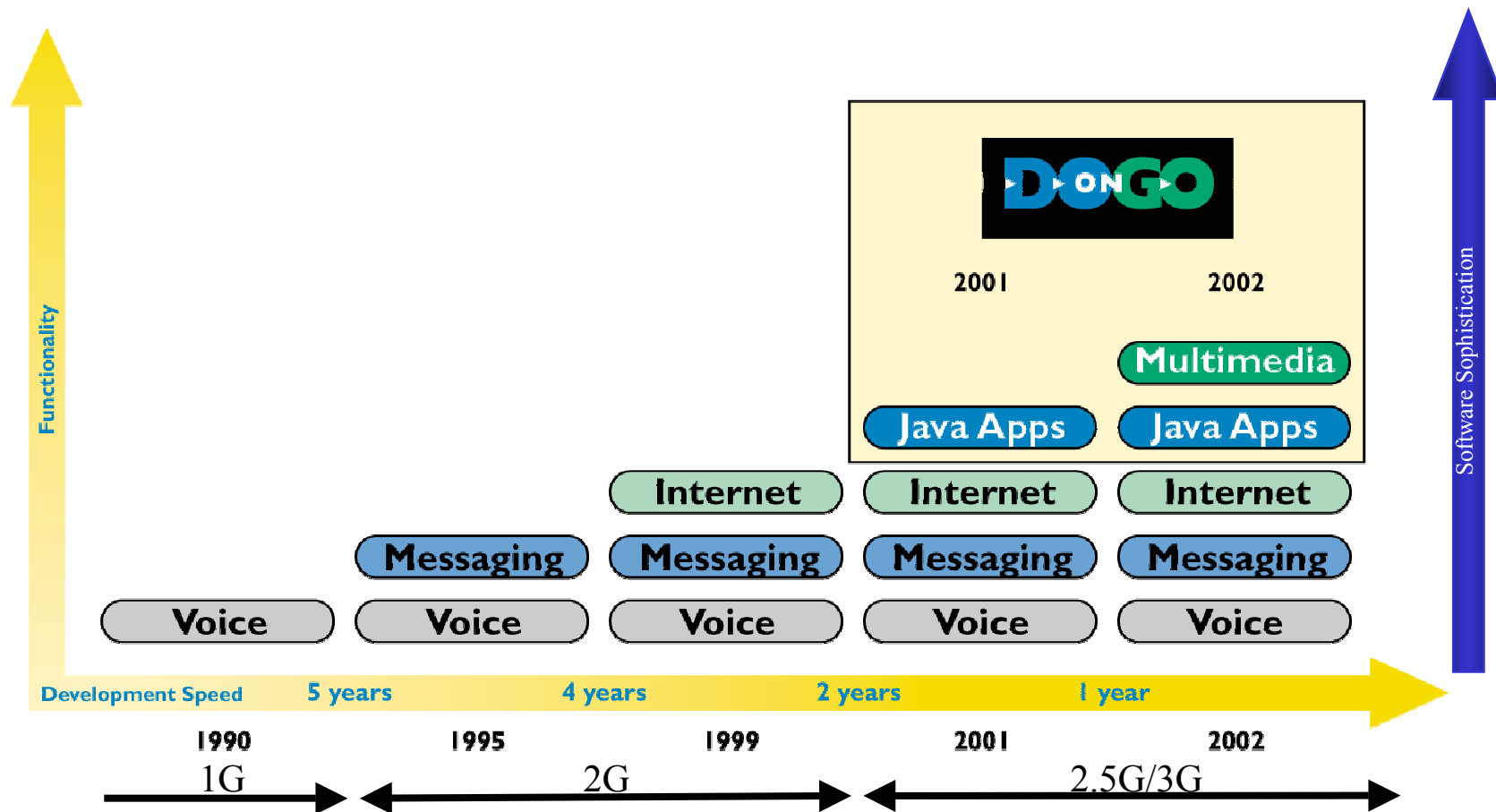
*Michael Liu  
VP of Engineering*

# DoOnGo

## *Market Trends & Core Technologies*



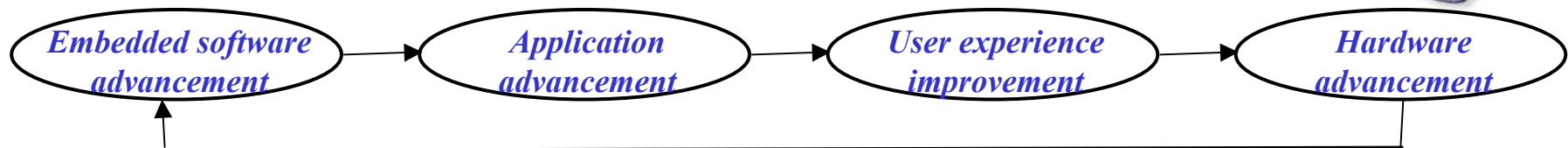
## ▶ 2.5G/3G and Wireless Java is Industry New Trends





# Industry Opportunities and Challenges

- **Opportunities**
  - 2.5G/3G: improved communication bandwidth – enables rich software offering and multimedia access
  - Java: open and industry standard platform for application development and deployment – stimulates and accelerates wireless application advancement
- **Challenges**
  - Increased embedded software sophistication – embedded software is prone to bugs and an infrastructure for bug fixing is indispensable
  - Accelerated standard evolution – enforcing version control over kernels, libraries, and tools saves huge maintenance cost
  - Transition to new value-added, higher ARPU services – enabling embedded software for open feature update is the key to success of miniature computing





# Phone Recalls: Only the Tip of the Iceberg!

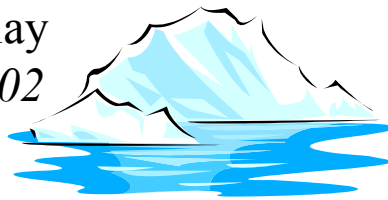
NTT DoCoMo embarrassed by Java handset sales suspension  
*Financial Times, February 9, 2001*

SONY to recall 120'000 mobile  
phones at a cost of \$95 millions.  
*Nikkei Electronics, May 22, 2001*

Nokia recently disclosed a software  
problem that could affect its plans to  
launch next-generation technology,  
called "3G."

*CNet, April 24, 2001*

Vodafone Warns of 3G Services Delay  
*Financial Times, August 8, 2002*



Sales Suspended of Latest  
i-Mode Wireless Phone  
*3G News, April 26, 2002*

SK Telecom May Delay 3G Until 2004  
*Financial Times, April 25, 2002*

SonyEricsson Puts 3G Phones on Hold  
*BWCS, October 25, 2001*

NTT DoCoMo scales back its plans  
for 3G due to software problems  
*Financial Times, April 24, 2001*





# Introducing Intelligent Software Infrastructure

Application Layer

- Games/E-mails
- Banking Application
- Micro Browser

Intelligent Software Infrastructure

- S/W Maintenance
- Java App Mgmt & Prov
- Caching/Virtual Memory

Wireless Communication Layer

- GPRS/CDMA Servers
- IP Servers
- HTTP/WAP Servers

Hardware

- Base Stations
- Networking Equipment
- Switch Centers



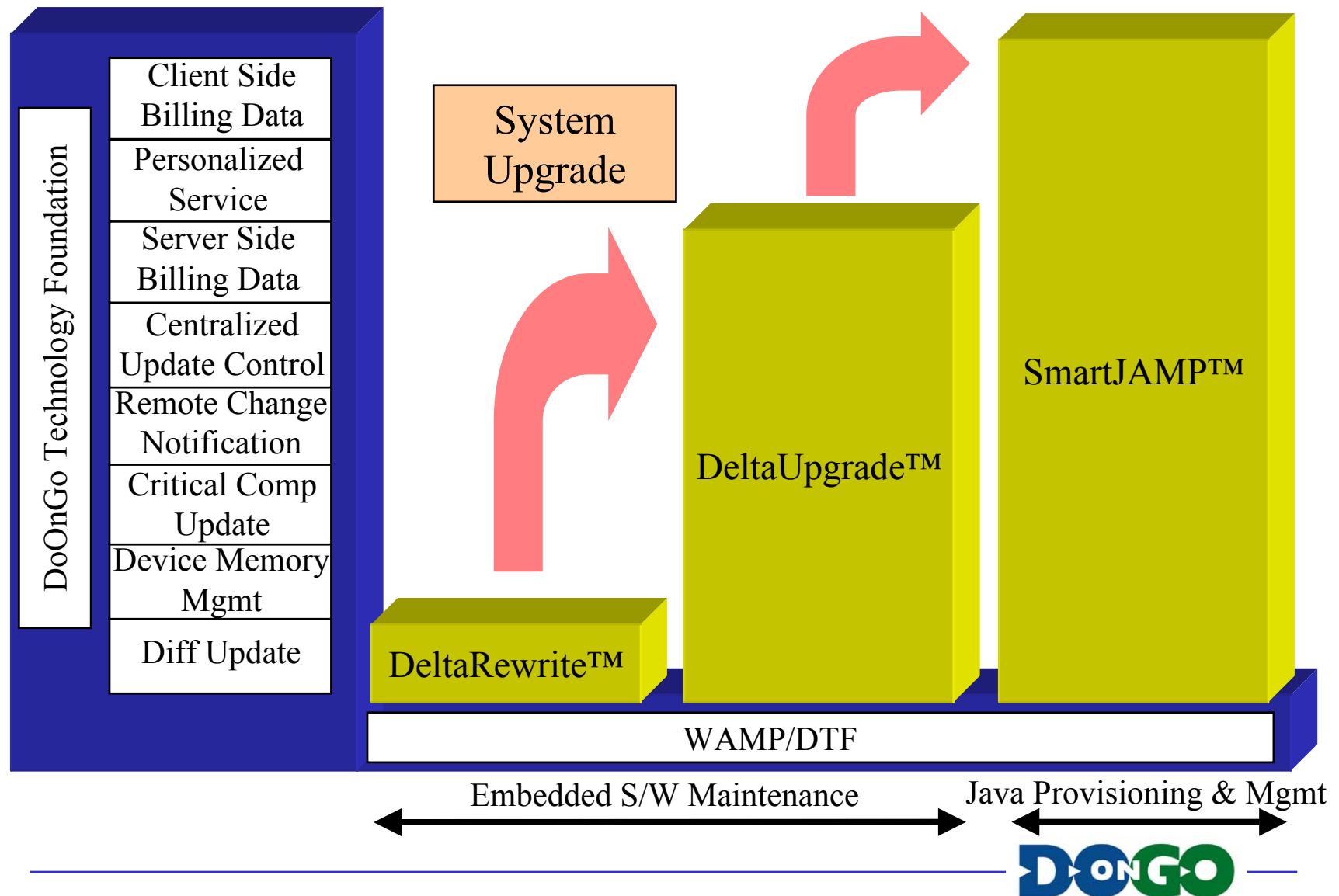


# The Bridge for Advanced Wireless Internet





# Scalable & Integrated S/W Mgmt Infrastructure



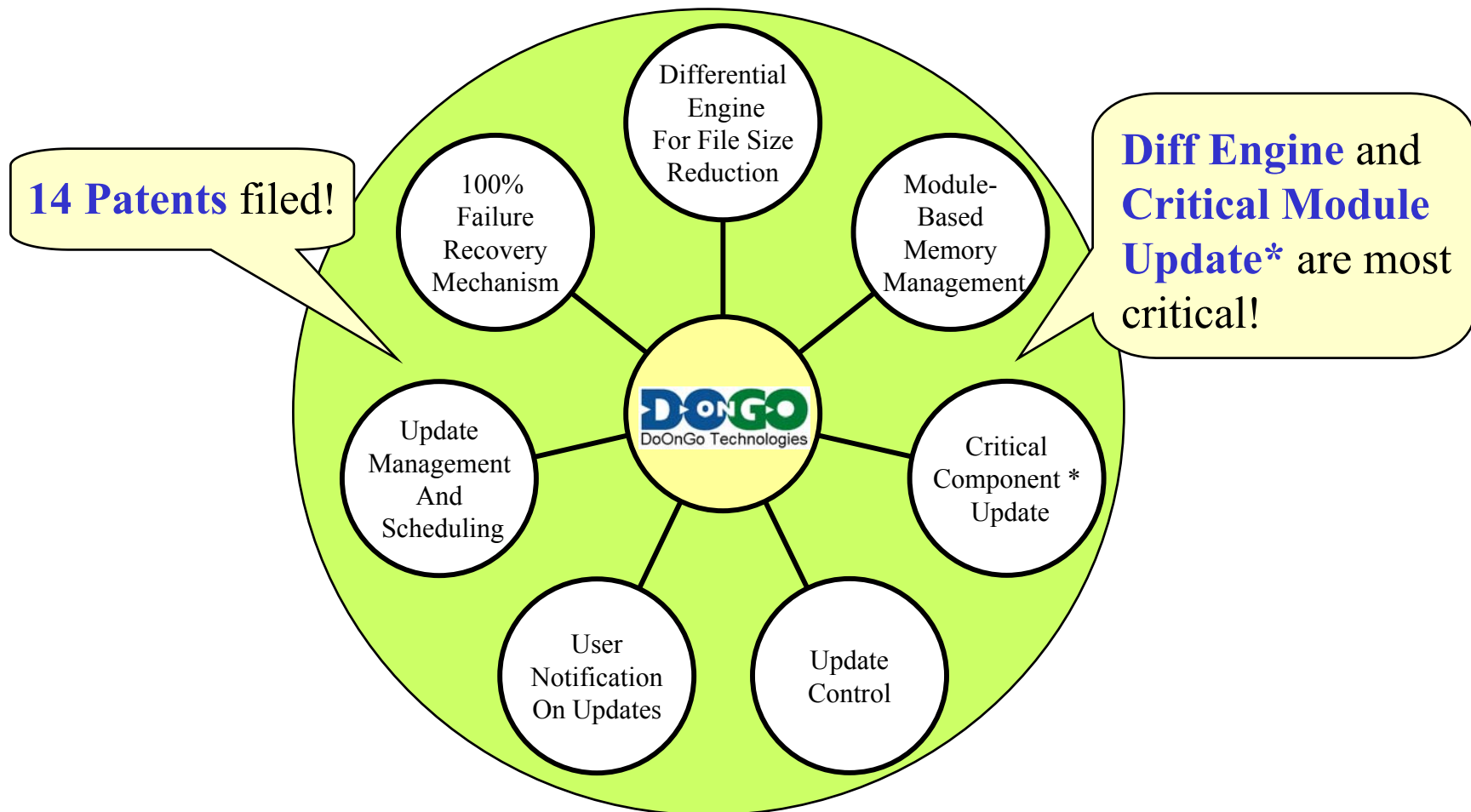


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## *Products & Core Technologies*



# DoOnGo Core Technologies

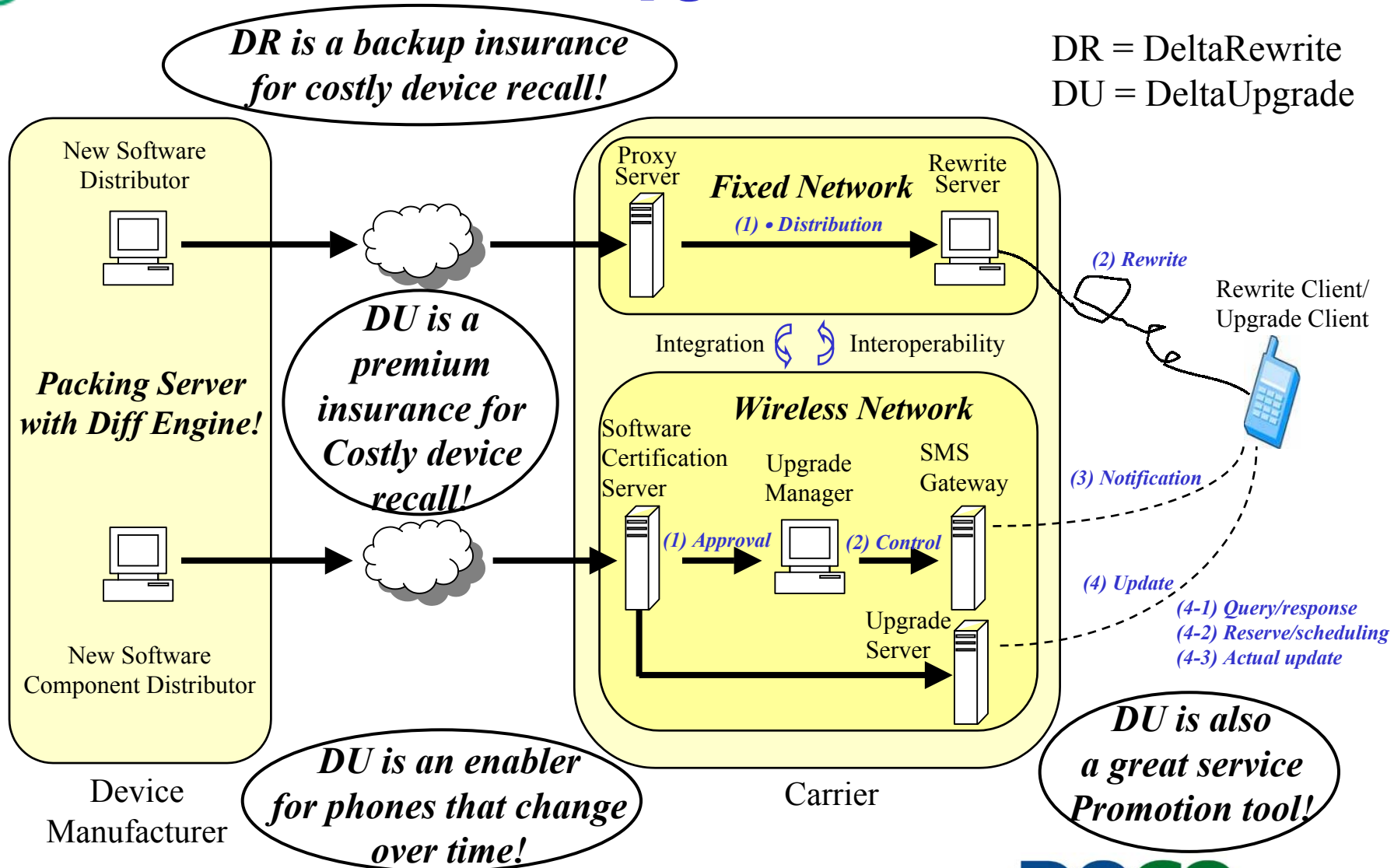


\* Critical Components = RTOS/Protocols/Drivers/...





# DeltaRewrite/DeltaUpgrade Architecture



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## *Product Impact and Market Momentum*





# Examples of Cost Savings with DeltaRewrite

**DeltaRewrite**  
**Saving major costs  
with software bug fix**

## **Cost savings with DeltaRewrite**

- ✓ *Prevent considerable goodwill and image loss with wireless handset vendors and carriers*
- ✓ *Lower logistics cost of recalled handset*
- ✓ *Lower handling costs (intake of handsets and return distribution)*
- ✓ *Lower voice/data revenue losses during bug fix*
- ✓ *No reflash of phone memory at factory site*
- ✓ *No new packaging of reflashed handset*





# Examples of Cost Savings with DeltaUpgrade

**DeltaUpgrade**  
**Saving major costs**  
**with software bug fix**  
**& *version control***

## **Cost savings with DeltaUpgrade**

- ✓ *On Time or Early Time-To-Market*
- ✓ *Prevent considerable goodwill and image loss with wireless handset vendors and carriers*
- ✓ *No logistics cost of recalled handset*
- ✓ *No handling costs (return and re-distribution of handsets)*
- ✓ *No voice/data revenue losses during bug fix & version control*
- ✓ *No reflash of phone memory at factory site*
- ✓ *No opportunity losses (i.e. halted production on other handsets,...)*
- ✓ *No new packaging of reflashed handset*
- ✓ ***No hassles related to standard software version upgrade***





# Examples of New Revenues with DeltaUpgrade

**DeltaUpgrade**  
Enabling entirely  
new revenue  
streams

## **New revenue streams**

- ✓ Create new revenues by selling new 'native code' handset features to consumer over-the-air
- ✓ Turn 12 month hardware product cycle of handset into shorter software product cycle
- ✓ Demand higher "software-like" margins on feature updates (i.e. 50-70%)
- ✓ Ability to build end-to-end relationship with consumer through online software updates
- ✓ Create new revenue by selling updated new 'Java apps' to consumer at lower price & greater convenience
- ✓ ...





## **Time-To-Market (TTM) Becomes Critical**

**Handset software reaching 16-18MB, upgrade problems can no-longer be ignored**

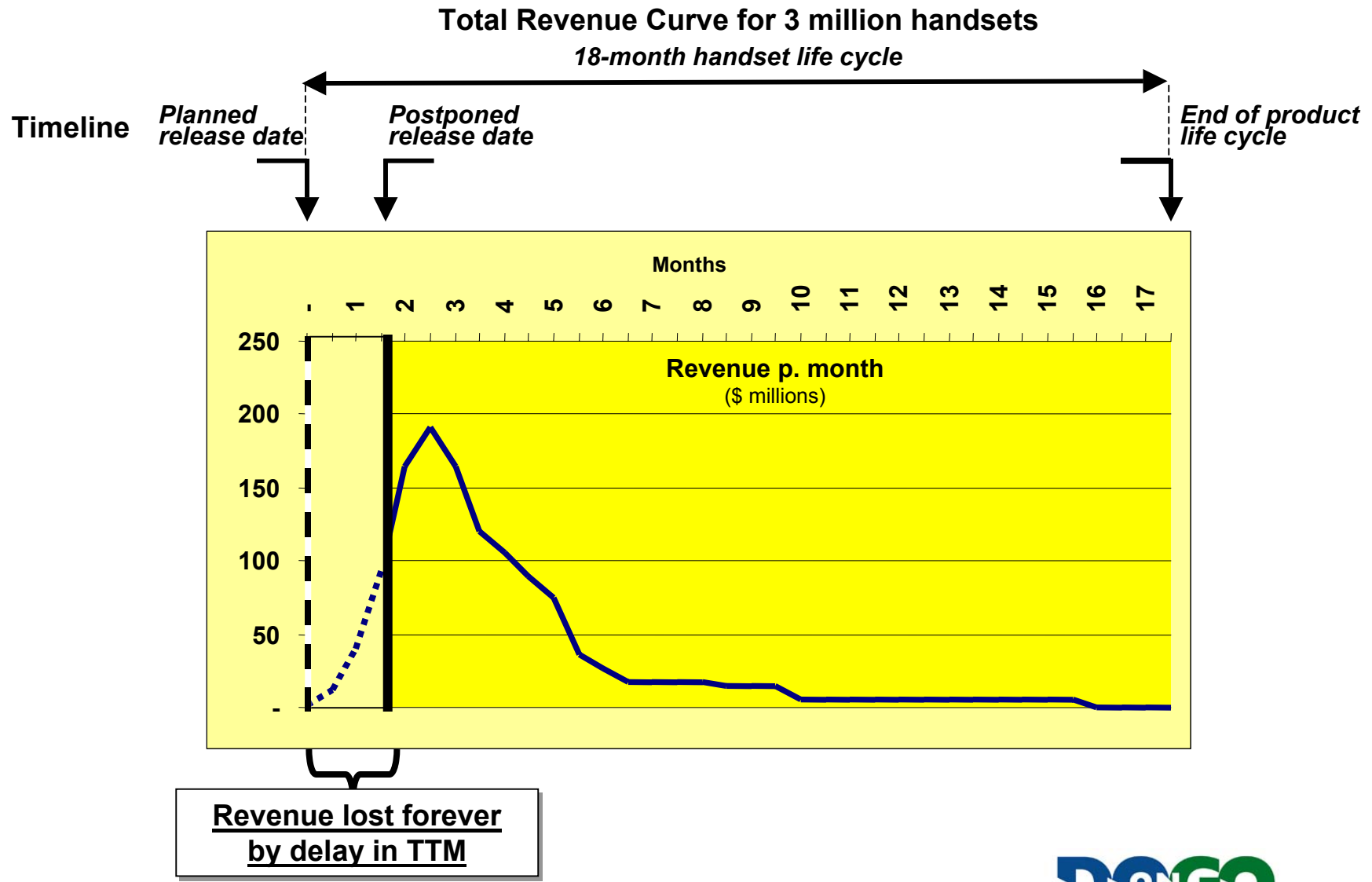
- **Multiple Wireless Carriers reporting in excess of 100 days to certify new handsets**
- **Applications on handsets being pulled because they are not totally tested & bug free**
- **Handset vendors and carriers losing hundreds of millions in revenues because of delayed Time-to-Market**







# We Decrease TTM by 2 Months and More



# Thank You!

