GSMA Webinar:

Unlocking the Embedded Notebooks Opportunity

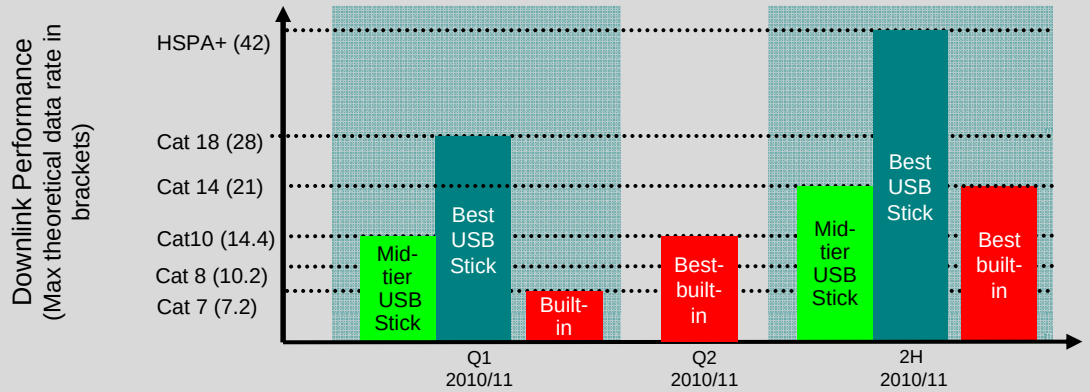
10th June 2010

Unlocking the Embedded Opportunity

Mark Rose
Head of Built-in Mobile Broadband, Vodafone Group

Status and trends for built-in

Business customers continue to prefer built-in	Built-in PCs were originally the preserve of business customers but over time, awareness has started diffusing to consumers
Increasing consumer awareness netbooks	Telco promotion of Netbooks has significantly boosted consumer awareness of the built-in option
New form factors will further improve awareness	The marketing hype generated by the launch of new form factors such as slates as well as the market entrance of high profile vendors such as Apple will accelerate the trend for improved consumer awareness
Price reductions	The move to software based modems, increased sales volumes, increased competition as well as increased standardization and additional integration experience with built-in modules are all helping reduce the price premium paid for built-in modules compared to USB sticks
Performance is improving	The performance of built-in modules is improving – but still lag USB sticks. We expect continued improvement but also a continued gap in performance.



Why uptake has been slower than expected

Awareness is still low	While business users have been long term users and advocates of built-in this innovation has been slow to diffuse to consumers, with relatively few aware of the option
Built-in doesn't deliver the same speed as USB sticks	Many operators invest heavily in network upgrades and marketing communications that differentiate their network based on its high performance. Built-in cannot deliver this performance to its users because modules don't offer the performance of modems in the USB stick form-factor.
Built-in is expensive compared to USB sticks	While costs are falling, built-in remains more expensive than a USB of comparable performance: -Module vendors charge a premium for modules compared to USB sticks of comparable performance. - The additional hardware and integration engineering work by computer vendors further increases the cost to deliver a built-in product to market
Customers can't buy the latest product with built-in	Time to market matters in the extremely competitive computer industry. While the engineering effort associated with built-in remains a significant exercise and delivers relatively low volume, the built-in option will always be deferred until after the non-built-in variant has gone through its development and production processes.
Built-in is fixed to one device	Customers purchasing a USB stick are able to plug the modem into any computer they want without incurring any additional charges – an option not available to built-in users



Changes that would help to drive mass market adoption

PCs are becoming genuinely 'personal'	The advent of Netbooks and slates computers are delivering affordable computing and a desirable user experience. The primary driver for purchase is internet-related usage and built-in complements WiFi to provide the user with connectivity wherever it's needed
Improved awareness	Built-in delivers genuine value to consumers and it remains important to invest in marcoms to communicate its benefits of reliable, simple connectivity
Improved availability	Computer OEMs should include built-in as an option across the range, not just in Netbooks and high-end devices.
Increased sales through the Telco channel	The reduced up front price of computers purchased through the Telco channel enables additional consumer segments to purchase built-in computers. Telcos must continue to broaden their range of computers and mobile broadband offers to serve additional market segments
Driving volume through IT retailers	IT retailers continue to dominate the market for mobile computer purchases and the channel needs to be better engaged in selling built-in. A concerted effort from networks, OEMs, IT Retailers and module manufacturers to jointly fund the incremental cost of modules would enable the sale of built-in computers at only a small premium. This should enable a step-change in sales volume, driving down costs, driving up awareness and so the virtuous circle is created.
Tariff innovation	Innovation in data tariffs should deliver tariffs that more closely match how customers want to use the service and allow flexibility to use a data bundle across devices

DRIVING EMBEDDED MOBILE BROADBAND MARKET



Hari Ganti

Sr Product Marketing Manager

10 June 2010

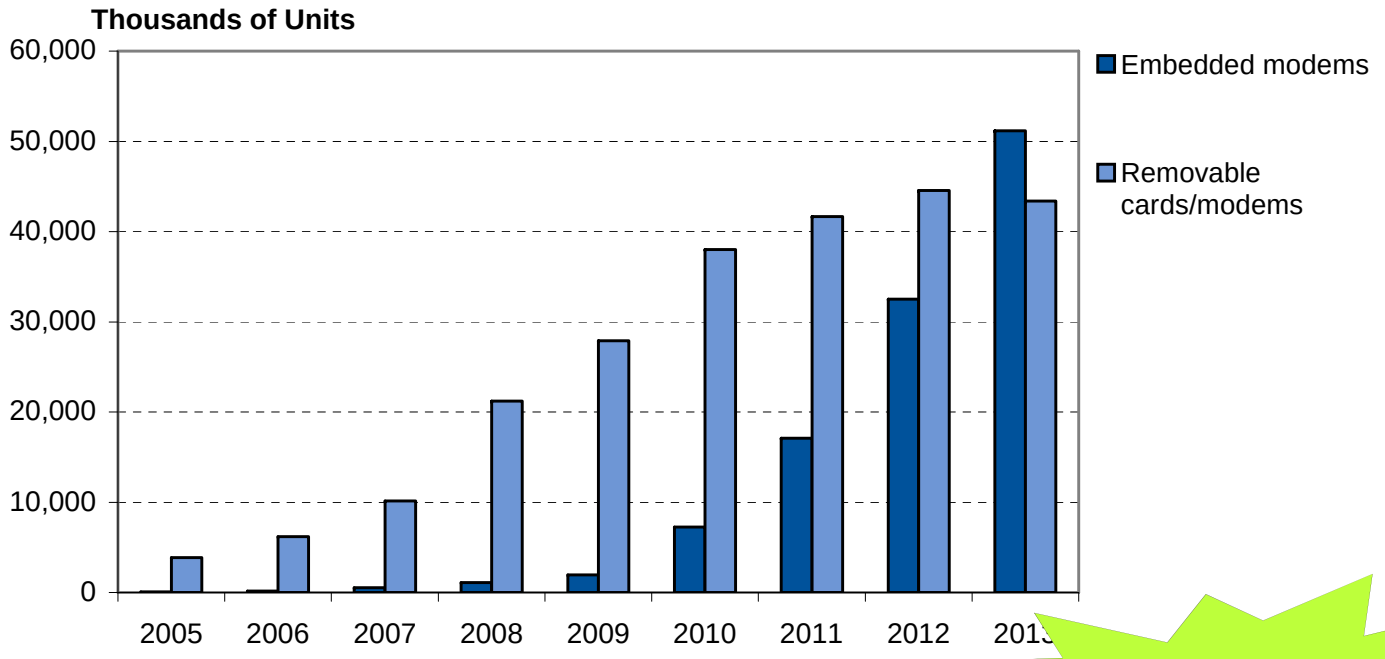
Agenda

Market Overview
Dell Vision
Key OEM Challenges

Embedded Mobile Broadband Market – Still in its Infancy

- More than 2% of the 140M laptops and netbooks sold worldwide in 2008 had an embedded cellular modem
- Attach rate on netbooks higher than on traditional notebooks ~ 15%

Embedded and Removable Wireless Modem Sales, Worldwide, 2005-2013



Source: Gartner (March 2009)

How can we get > 90% attach

Dell has unique assets and experience to bring to the table

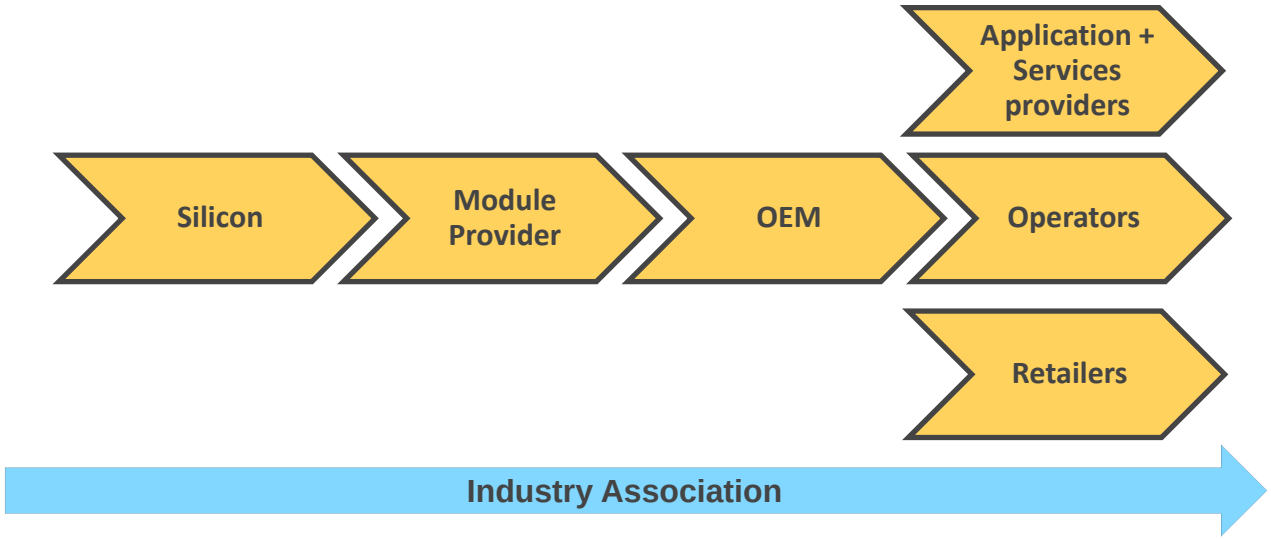
- **Dedicated Organization**
  - Entire organization focused on delivering relevant connection solutions under Ron Garriques – CSG (Communication solutions Group)
- **Product Leadership**
  - One of the first OEMs to embrace embedded notebook solutions
  - One of the first OEM to drive netbooks through operator channel
- **Direct Channel**
  - Worlds largest e-commerce site, with direct channel to customers
    - 500 million visitors
    - 13 billion page views



Enablement costs and Awareness are inhibiting the adoption of Mobile Broadband on notebooks

- **Costs**
  - Module Costs
    - Still in the above $60 range, upsell of $100-$125 for Module
  - Consumer Tarriffs
    - Prevalence of 2 year contracts in some parts of the world
    - Not very good awareness of session based and pre-paid offerings
- **Awareness**
  - Low awareness of mobile broadband benefit among consumers
  - Hard to distinguish embedded mobile broadband SKUs
- **Complexity**
  - Certification – Current process is not scalable and inhibits fast market entry

Mobile Broadband adoption can be accelerated with participation from key players in the value chain





Customer

Activity	Player
Drive consumer costs of adding MOBRO down to wifi level: $0-$19.99 upsell	Chipset, Module supplier
Promote lower cost MOBRO plans when no subsidy is involved -including pre-paid plans, session based plans– $9.99 for day pass or $29.99 for monthly access,	Operators
Streamline certification process for new platforms – use wifi certification as a guide	Industry associations
Create compelling use cases with key content / application services highlighting mobile broadband lifestyle	OEMS and Marketers
Drive awareness through all relevant channels – put together awareness and demand gen program	Retailers, Operators, OEMs, Industry associations

Thank You !



Unlocking the Embedded Notebooks Opportunity

Jeremy Fennell, June 2010

DSG international

bringing life to technology

A leading European specialist electricals Group



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PC and Mobile are Converging

Telecoms Retail

- Connects Devices to Subscription
- Driven by Subsidy Model



Pager
1956



GSM
Mobile
1991



PDA
1996



Smart
Phone
2000

The 5th Screen



Netbook
2007



Laptop
1988



Desktop
1976

PC Retail

- Connects Subscription to Devices
- Customers pay for Device, without subsidy

Technology, usage and supply base are entering each other's markets

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How the Connected World works

On the move
3G subscription



Smartphone

"I want an always on connection to be available for voice and e-mail contact"

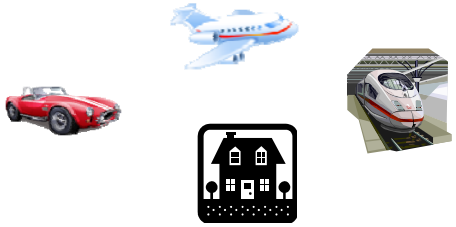
At home
Broadband subscription



PC
TV
Home Network

"I want a connection for convenience, high bandwidth for media rich content and multiple user access"

Everywhere
No subscription



Laptop
iPad
Tablet
E-reader
Netbook
Handheld consoles

"I don't want to pay for constant connection. I want to dip in/dip out when it suits me, cost effectively"

Subsidised hardware ← → **Hardware choice**

Demand for embedded Mobro are light, & mass market will not pay premium.

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Customers will not pay more…..

$60 module cost

7% connection

Shift to prepay…





Embedded SIM module still adds circa 10% to the BOM

Low attach rates prevent mass inclusion to notebook ranges

…and on prepay, it doesn't pay back!

Until connection bounties & usage allow, market will not embed mass-market devices without significant module cost-price reduction

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Deliver the Complete Solution to the Customer



Hardware



Accessories

WiFi and 3G Connections



Content
Software
Applications
Usage

THE TECH GUYS

Set up and Support

The full end to end customer journey

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Discussion