Diversification in Connectivity Business Group

Sean McGrath
VP and General Manager
Connectivity, Automotive and Industrial Business Group
London, 12 September 2013
This presentation contains “forward-looking statements” that reflect management’s current views with respect to future events. The words “anticipate,” “believe,” “estimate, “expect,” “intend,” “may,” “plan,” “project” and “should” and similar expressions identify forward-looking statements. Such statements are subject to risks and uncertainties, including, but not limited to: an economic downturn in the semiconductor and telecommunications markets; changes in currency exchange rates and interest rates, the timing of customer orders and manufacturing lead times, insufficient, excess or obsolete inventory, the impact of competing products and their pricing, political risks in the countries in which we operate or sale and supply constraints. If any of these or other risks and uncertainties occur (some of which are described under the heading “Risks and their management” in Dialog Semiconductor’s most recent Annual Report) or if the assumptions underlying any of these statements prove incorrect, then actual results may be materially different from those expressed or implied by such statements. We do not intend or assume any obligation to update any forward-looking statement, which speaks only as of the date on which it is made, however, any subsequent statement will supercede any previous statement.
Entering Growing Markets

*With a strong technology basis*

- Low latency Audio
- Bluetooth Smart
- DECT
- Legacy

**Focus**

**Quantity**

**Time**
Bluetooth Smart
Bluetooth® Smart
How does it fit into the Ecosystem?

- Evolution of current Bluetooth standard – open and license-free standard
- Focus on ultra-low power consumption
- Faster connection set-up and tear-down
Gateway penetration is key for enabling Bluetooth Smart peripherals
- Attach rate approaching 100% in new smartphones and tablets
- Expanding to Laptops, Smart TVs and other products

Smartphones

Smart TVs

Tablets

Laptops & Ultrabooks
350m+ Bluetooth Smart ICs to ship by end of 2016 (IHS Inc. forecast, 2013)

- Wearables CAGR 70%
- Proximity and indoor navigation CAGR 90%
- Smart TV and Gaming remotes CAGR 105%
- Human Interface Devices (HIDs) CAGR 109%
Strong Consumer Demand
…and it’s a profitable market for ODMs

63% of consumers who exercise regularly would be willing to buy wireless sensors to monitor performance via a sports and fitness app on their smartphone.

>$140 82% of those consumers would be willing to pay $142 for an accessory.

>60% ODMs typically make > 60% margin on wearable computers (e.g. Smart Watches).

SmartBond DA14580
A Breakthrough Solution

- Single-mode Bluetooth® Smart System-on-Chip solution
- Optimized for low power, small size and low system cost
- Available in 3 package types
- Embedded Bluetooth SW stack
- Complete development environment
- Product release to clients in Nov ‘13
A Breakthrough Solution
World’s Lowest Power Consumption

Power consumption of currently available solutions

- Double the lifetime of your product
- Halve the size of your battery and reduce the size and cost of your system
A Breakthrough Solution
World’s Smallest Solution

<\frac{1}{2}

Package size of currently available solutions

- 2.5x2.5x0.5mm WL-CSP package

- Minimize the size of your PCB

- Create previously inconceivable small form factor industrial designs
Number of external components for complete core solution compared to currently available solutions

- Minimize the size of your PCB
- Reduce the cost of your system
A Breakthrough Solution
Exceptional Flexibility and Robustness

- Powerful 32-bit ARM® Cortex™ M0 core with on-chip One-Time Programmable (OTP) memory
  - Removes need for external processor
  - Provides design flexibility
  - Reduces cost

- Works with 1x alkaline/NiMH cell
  - Can run from voltages as low as 0.9V
  - Competitor implementations require 2 cells
  - Enables a more compact design and reduces system cost

- Reliable and robust radio link
  - 93dB RF link budget
  - High interference tolerance
Bluetooth benchmarking
Leading in Power and Size

Competitors BT 4.0 Single Mode

- Package Size (mm²)
- RX Power (mW)

Comparing the package size and RX power of various competitors in Bluetooth 4.0 single mode, Dialog Semiconductor's DA14580 stands out for its leading performance in both power and size.
Audio

USB
Low latency
Wireless
Dialog’s Audio Accessory IC Strategy

Using “Unified Communication” customers as a starting point

- One platform: USB-Audio, Low latency-Audio and Other wireless-Audio
- One tool chain for audio tuning and configuration
- Dialog is market leader in this growth segment

Audio accessories proposition

- R&D cost savings
- Time to market
- Programmable/customizable solutions
Battle of the Bands
No signal? You could be waiting a long time for it: UK set to have a severe shortage of airwaves for wi-fi by 2020

- Ofcom predicts 80 times more demand for mobile data capacity by 2030
- The worst interference will be in high speed indoor wireless networks
- The regulator said moving up to the 5GHz band could resolve some issues

By ELLIE ZOLFAGHARIFARD
PUBLISHED: 17:36 GMT, 14 August 2013 | UPDATED: 17:36 GMT, 14 August 2013
No signal? You could be waiting a long time for it: UK set to have a severe shortage of airwaves for wi-fi by 2020

- Ofcom predicts 80 times more demand for mobile data capacity by 2030
- The worst interference will be in high speed indoor wireless networks
- The regulator said moving up to the 5GHz band could resolve some issues

By ELLIE ZOLFAGHARIFARD
PUBLISHED: 17:36 GMT, 14 August 2013 | UPDATED: 17:36 GMT, 14 August 2013

We’re using a ton of mobile data. With Google Glass, we’re about to use a whole lot more.

By Brian Fung, Published: July 30 at 7:45 am  E-mail the writer
No signal? You could be waiting a long time for it: UK set to have a severe shortage of airwaves for WiFi since 2030

- Ofcom predicts 80 times rise in demand
- The worst interferer
- The regulator said no

By ELLIE ZOLFAGHARIFARD
PUBLISHED: 17:36 GMT, 14 August 2013

August 12, 2013 5:57 pm

Telecoms regulator warns of WiFi airwaves shortage

By Daniel Thomas

We’re using a ton of mobile data. With Google Glass, we’re about to use a whole lot more.

By Brian Fung, Published: July 30 at 7:45 am   E-mail the writer
No signal? You could be waiting a long time for it: UK set to have a severe shortage of airwaves for fixing 2020

- Ofcom predicts 80-t
- The worst interferer
- The regulator said r

Dutch wifi network is over-taxied and jamming up: experts

Friday 23 August 2013

The wifi network in the Netherlands is becoming over-congested and that is creating problems as more free services come online, experts have told the NRC.

'We see congestion,' John Derksen of the Telecom Agency, which is responsible for wireless communications in the Netherlands.

The cause, the paper says, is growth in use of the 2.4Ghz frequency band which is licence-exempt, meaning that manufacturers and users do not need to have licences to make or use devices that run in it.
Battle of the Bands

1.9GHz Interference Free Band
Low Latency – Audio

- Robust interference free 1.9 GHz frequency band

- Licensed, but free frequency band

- Fixed, low latency (isochronous communication)
  - Unified Communication (MS Lync, Skype)
  - Latency 14 to 20 ms, Lip sync (Audio + Video)
  - Left/right latency < 1us
USB – Audio

- Targets Unified Communication Office and Call Center with PC’s, Laptops, Tablets

- Advantages over Analog headsets - offer high quality headset solution for Microsoft Lync:
  - Plug and Play
  - Lync compliancy (Latency, Presence detection, etc…)

- Voice Enhancements
  - Acoustic Echo Cancelation
  - Noise Reduction
  - MIC and speaker equalization
  - Custom audio/voice enhancements
Audio Accessories TAM

TAM Sources
- IHS Electronics & Media
  Consumer Headphones and Headsets - Corded and Wireless - World – Aug 2013
- IMS Research, AV Receivers & Advanced Home Audio – April 2012
- Plantronics Q1 FY2014 Financial report. TAM World Wide Industry Revenue Expectations Consumer and Office & Contact Center products, Aug 2013
- Dialog Sales and Product Marketing, Aug 2013
Dialog Customers

- Plantronics®
  Simply Smarter Communications™
- Audio-Technica
  Always listening
- Sennheiser Communications
- Jabra®
  You’re on
- HME
- Revolabs
  Wireless Microphones
Audio Accessories IC Focus

- **USB-Audio, SC14110 series**
  - USB wired headsets
  - Completing the series from low-end to mid segment
  - Introducing new high-end headset chips

- **Low latency-Audio, 1.9GHz wireless**
  - Interference free
  - Increased density and
  - Integrated power-management

- **Next generation wireless Audio IC’s**
  - Focus on best HiFi solution
  - Connectivity
  - SW compatible with USB- and low latency-Audio
Key Takeaways
Connectivity Business Group

- Build on foundation of Low Power RF and Audio competencies
- Bluetooth Smart breakthrough product confirmed by market
- Increase audio share through partnerships
- Return Connectivity to growth path
The power to be...