21ST CENTURY HEALTHCARE: MOBILE HEALTH

Sept 2016 HL7 WGM @ Baltimore, MD, USA

Presented by:

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- ✓ HL7 International Ambassador (2009 – current)
    - ▪ Member HL7 Technical Steering Committee (TSC) - 2016
    - ▪ Co-Chair Structure & Semantic Design Steering Division - 2016
    - ▪ Founding Co-Chair HL7 Mobile Health Work Group (2011 – current)
    - ▪ HL7 2009 Volunteer of the Year Award Winner
- ✓ HL7, IEEE, HIMSS Speaker
- ✓ HL7 Meaningful Use Tutor/Speaker
- ✓ Chair IEEE OC (Region 6 – USA) (2016 – current)
- ✓ Co-Chair IEEE OC CyberSecurity SIG (2015 – current)
- ✓ HIMSS Connected Health Committee Member (2015 - 2016)
- ✓ US Delegate to ISO/TC215 Health Informatics (2009 – current)
- ✓ ICT Expert - World Bank, Asian Development Bank
- ✓ Senior Member: IEEE, ACM

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WALK DOWN THE MEMORY LANE

- **British [Royal Army Medical Corps](#) carries out the first successful [blood transfusion](#) using blood that had been stored and cooled**

- **World War I continues**

- **BMW is born**

1916

- **Toggle [light switch](#) is invented**

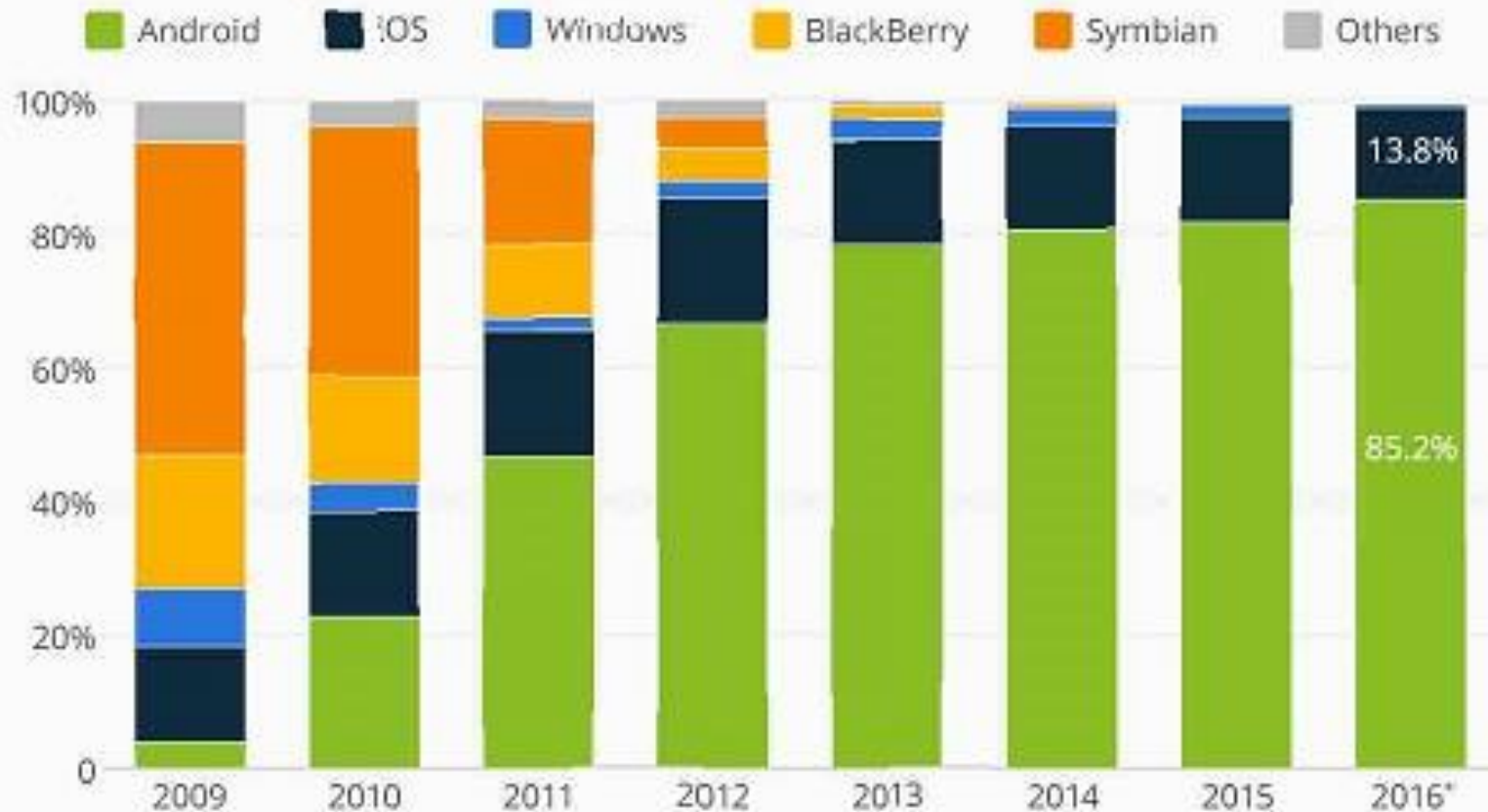- ***Pacific Aero Products* (later renamed *[Boeing](#)*) *is born***

MOBILE REVOLUTION!

- **Mobile phone market**
  - **first billion mobile phones: 20 years**
  - **second billion phones: 4 years**
  - **third billion: 2 years**
  - **Fourth & fifth billion: 1 year – in 2013**
  - **2014: nearly One Billion "smart" mobile phones sold globally**
  - **2015 – Over 1.2 Billion smart phones sold**

- **80+% of the world's population lives within range of a cellular network, (40% in 2000).**

MOBILE PLATFORM in 2016

The Smartphone Platform War Is Over

Worldwide smartphone operating system market share (based on unit sales)

Android · iOS · Windows · BlackBerry · Symbian · Others

85.2%

13.8%

* January – June
Source: Gartner

@StatistaCharts

statista

OUR CHALLENGE

- **There are over <u>165,000 mobile health apps</u>**
  - **RIME OF THE MODERN TECHNOLOGIST - "mobile, mobile everywhere….none *talk* to anyone"**
  - **12% of mHealth apps account for more than 90% of all consumer downloads**
  - **with nearly half of all downloads generated by just 36 apps**

- **<u>By 2017, 50% of smartphone user will have downloaded mobile health apps</u>**

- **<u>90% of MH (and financial) apps are vulnerable to critical security risks</u>**

- **Mobile Health app are <u>projected to become a regular part of our care</u> (over the next 5 years)**

➢ **THE GOLD RUSH……**

MOBILE HEALTH MARKET SIZE

- **2016 projection: > $13B**

- **By 2017, it is estimated, the market for Mobile Health apps, will be…**

  - **$26 billion**

- **By 2020:**

  - **> $50B**

MOBILE HEALTH STAKEHOLDERS

Mobile Health Dimensions & Stakeholders

Technology
- Health IT
- Devices/Mobiles
- Telemedicine
- Security

Policy
- Gov(federal-local)
- Advocacy-Lobbies
- Prof. Associations
- Standard Dev Orgs

Science
- Universities
- Informatics
- Engineering
- Health/Bio

Business
- Providers
- Payers
- Vendors
- Telecom/Health

Society-Culture
- Consumers
- Patients
- Foundations
- Media-News-Arts

MOBILE HEALTH: Not a vertical domain
But a horizontal framework that cuts across and impacts all health care domains

Source: HL7 Mobile Health Newsletter V1Is1

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HL7 MOBILE HEALTH WG MISSION

- **The HL7 Mobile Health Work Group creates and promotes health information technology standards and frameworks for mobile health.**

- **http://wiki.hl7.org/index.php?title=Mobile_Health**

HL7 MOBILE HEALTH WG CHARTER

- **Identify (and develop, as applicable) data standards and functional requirements that are specific to the mobile health environment**

- **Identify and promote** mobile health concepts for interoperability as adopted and adapted for use in the mobile environment

- **Coordinate and cooperate with other groups** interested in using mobile health to promote health, wellness, public health, clinical, social media, and other settings.

- **Provide a forum** where HL7 members and stakeholders collaborate in standardizing to enable the secure exchange, storage, analysis, and transmission of data and information for mobile applications and/or mobile devices.

Mobile Health Scenarios

- **Patient empowerment**
  - **Patient involvement in care process across a wide range of lifestyles, including: support for long term conditions**
- **Moving around a hospital**
  - **EHR System services follow providers around a hospital**
- **Independent living**
  - **Assisted living drawing on a range of mobile services**
- **Behavioural health**
  - **Behavioural health support anytime, anywhere**
- **Messaging (ranging from unsecure to secure)**
  - **Bridging the health divide**
- **Public/Population Health**
  - **Disaster Management to PH outreach**

MOBILE HEALTH MARKET TREND

1. **Main driver: Ever increasing global smartphone users**
2. **Young Customers driving the market**
3. **MH apps leveraging features of smartphones or tablets**
   - **Location service**
   - **IM**
   - **Picture, Video**
   - **Gyroscope**
   - **Micro payment service**
4. **MH apps native rather than web-based**
5. **Birth of MH app stores**
6. **MH will push/expand/broaden the health business model**
7. **MH apps will bridge the global health divide**
8. **Evolving HL7 MH standards**

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KEY MOBILE HEALTH AREAS in 2016-20

- **Wearable & Smart Diagnostics**

- **Healthier Living (Wellness programs)**

- **TeleHealth**

- **Personalized Medicine**

- **Secure Health Apps**

HEALTHCARE IN THE 21st CENTURY

- **Next generation: "iPAD™" kids**
- **Blurred Lines: Impact of Social Media**
- **Are we there yet: I want it NOW**
- **Take Charge: Consumer Health**
- **Gene to genes: from Star-Trek (Gene Roddenberry) to Genetic Health – personalized medicine**
- **Space – The Final Frontier: "Healthy" flights**
- **Back to the Future: longitudinal Health Record**
- **Live long & prosper: from provenance to preservation**
- **Emerging Areas: IoT (HoT), Big DATA, Open Data**
- **Global Village: Urban, Rural, Remote, Underserved**
- **"l'addition s'il vous plaît": Mobile micro-payments**
- **Take care: CyberSecurity**

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SUMMARY!

- **MOBILE HEALTH**
  - **Not a vertical domain**
  - **But a horizontal framework that cuts across and impacts all health care domains**

- **As we transition to a digital record framework; use of Mobile Health leads the way (in access, capture and dissemination of health information)**

- **As Mobile Devices become more and more ubiquitous, accessing our Health Information is only a few tap/swipe away!**

- **HEALTHCARE IN 21st CENTURY**
  - **Mobile Health Enterprise**

THANK YOU

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