Mobile World Congress 2016 - A personal view.

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1. Overview / Main Themes

The world's biggest mobile trade show, Mobile World Congress, took place in Barcelona between 22-25 February 2016. As has become customary, the show's attendance broke previous records: the GSMA announced on the final day that 101,000 people had attended MWC in 2016, an increase of almost 8% over the 2015 show's attendance of 93,000. The event is slowly moving to become more of a consumer electronics show as a variety of networks connect an increasingly significant number of consumer devices together.

Mobile Is Everything
- The GSMA's big theme for this year was 'Mobile is Everything' which has been remarked on by another commentator as somewhat ironic. Given that there was a public sector transport strike on both the Monday and the Wednesday which resulted in gridlock in many parts of the city a better phrase for the city has been suggested as 'Immobile is Everything'.

  Once into the event the theme of 'Mobile is in Everything' appeared to hit the mark this time round as the show was just that. Significant representations from a wide range of sectors including Mobile Health, Payments, Big Data, Vehicles, IOT, Security, and Wearables were all present.
- The first thing to note about wearables is that they are becoming far more attractive (remember how embarrassing individuals looked wearing Google Glass?). The devices on show included:
    - Iofit smart shoes to evaluate performance and to deliver real time data to your phone with coaching and analysis software to help improve performance.
    - Garmin Vivofit 3 and Vivoactive HR fitness tracker including a heart rate monitor and a barometric altimeter.
    - The Jacob Jensen smart bracelet connects to your phone and uses gesture recognition for actions like taking a call or sending a text.
    - FlexEnable a prototype flexible display that can wrap around your wrist.
    - Sony Xperia Ear a Bluetooth headset that through voice control, can make calls, send texts, and provide you with driving or walking directions. You can also use it for calendar events, notifications, and weather information.

  However, for wrist mounted wearables (which appeared lower key this year) as it appears to be dawning on the device manufacturers that the device is not just another mobile screen and that gaining the right level of consumer engagement/full acceptance will offer a full range of challenges. It could present, as indeed the mobile screen did previously, a significant challenge for providers to resolve what to best present on the device that will be useful and relevant to the end user.

Virtual Reality
- If VR is counted as a wearable - and this category is counter to the comment that wearables are becoming more attractive as clearly none of the VR headsets look attractive – wearables were everywhere. Devices on show included:
    - The HTC Vive VR headset (at a whopping $799), including a number of ancillaries.

- The LG 360 VR – lighter and smaller than the Samsung or the HTC, it connects to the LG G5 to play back both 360-degree VR content as well as 2D video.
- Google Cardboard, winner of the GSMA Award for application of the year, and not at all new but a great piece of innovation using a simple low cost approach to deliver a new and different experience.
- And the most likely commercial winner (at least initially), the Samsung Gear VR (below), developed in collaboration with Oculus VR. The device was launched at the show with a surprise guest appearance of Mark Zuckerberg the Facebook CEO who acquired Oculus last year, into the press conference whilst the members of the press were mid 'VR view'. The photograph taken in the hall has already generated a number of internet memes: Zuckerberg is hoping that the future of Facebook is the sharing of 360

- The Samsung device utilises the Samsung handset in landscape mode and that acts as the screen. It is priced very competitively at $99 and will be presented in bundled offers with the latest Samsung S7 and S7 edge to drive sales of these devices. One significant downside is the battery drain as both the screen and the processor are running flat out, as a result having the headset on 'charge' will be important for users.

5G
- There was, as with last year much talk of 5G and the benefits that it would bring. The general view was that 2016 will be the year when the hype dies and it begins to feel real. http://www.engadget.com/2016/02/27/5g-is-finally-taking-shape-this-year/ The standard is expected around 2018 so it is still a concept. That said the timelines for commercial deployment look unlikely before 2020 and large scale deployment will probably take much longer. However, benefits being discussed included sub millisecond latency and speeds up to ten times faster than LTE.
Last years the Huawei CEO Ken Hu had shared a view that latency at 4G is 50 milliseconds, compared at 5G it is 1ms, meaning that a car driving at speed, would take 1.4m to brake with 4G vs 2.8cm with 5G; a significant increase in safety. This year a model had been built by Samsung to demonstrate the decreased latency when moving from 4G to 5G, using a robotic arm to catch a falling ball bearing released from the slower network. The 5G managed ball bearing was released earlier and fell to the floor.

Moving to the application of 5G Mark Zuckerburg suggested that VR would be a killer application of the new network speeds and latency. Separately Facebook has announced the Telecom Infra Project, an initiative designed to overhaul telecom network infrastructure in order to meet the world's data needs ahead of the roll out of 5G. The social network has teamed up with mobile providers and operators including Nokia, Intel and Deutsche Telekom to work towards a more efficient way of handling data-intensive operations like watching video and virtual reality. He also updated on the plan originally called for last year for operators giving away basic internet services for free (aka Free Basics) i.e. with no access charge (including of course Facebook) in developing territories. He also expressed disappointment that 5G industry was on connecting things rather than the unconnected.

Meanwhile Gavin Patterson (CEO, BT) was suggesting that BT would be spearheading the move to 5G in the UK, following the acquisition of EE, the previous research carried out by BT and their representation within the 5G consortium along with the University of Surrey.

However, the industry has seen a decline in the returns generated by MNO's in much of the developed world over recent years and with a GSMA estimate of $1.7trillion of capital investment that MNO's will make in the next 5 years on existing networks alone, there remains the key question of how industry will fund 5G.

- Once again no sign of **Apple** at the event, although some of their executives were present – all having removed their badges before they entered the event.

- The growth of sensors, wearables and 'The Internet of Things' **(IoT)**. One of the biggest innovation areas in 2015 will be in IoT and sensor technology. Companies present at the event included those presented technologies to use sensors for smarter lighting systems for the work place to reduce energy consumption and provide the right working environment, organisations that develop clothes with sensors that track walking steps taken, calories burned, temperature and distance travelled, aimed at the athlete market and toothbrushes that monitor how well you are brushing your teeth. There will be many more.

    Identity management
- Identity management is a relatively new item on the agenda within this event but it is now seen as one of the most important items on the agenda for the shows organisers and an opportunity for Telco's globally. As the world moves online the ability to prove the identity of an individual for a transaction be it financial, for a security check or other reason, against the backdrop of rising cybercrime is becoming increasingly important

- Meanwhile the big news from the GSMA was that they have agreed deals with 34 network operators in 21 countries for its Mobile Connect (mobile based authentication) solution Simply by matching the user to their mobile phone, Mobile Connect allows users to log-in to websites and applications quickly without the need to remember passwords and usernames. It's safe, secure and no personal information is shared without permission. Could this be the next 'big thing' to come out of the GSMA? In the GSMA's words 'Mobile Connects' success is down to industry collaboration in providing an interoperable identity solution that will offer digital service providers the opportunity to improve user experience and further reduce the risk of identity theft, whilst still growing loyalty, market share and delivering consumer insights'.

- A number of organisations are looking to sign up and Danal Inc., a mobile identity and authentication products provider, has announced that it is working with the GSMA, to increase mobile connect adoption among Danal clients.
  http://www.mobilepaymentstoday.com/news/danal-works-with-gsma-on-mobile-identity-services/
- http://www.ft.com/cms/s/0/90b635da-d6ea-11e5-8887-98e7feb46f27.html#axzz40pFAK6OV
- Value continues to move up the stack – from connectivity towards applications.
  This has been clear for some years now. Mobile infrastructure has advanced rapidly so that more data speeds are possible because of better modulation and closer/better antennas serving mobile users. Both of these challenges are now met by better processing power and better allocation of capacity so that Network Function Virtualization (NFV) and the Software Defined Network (SDN) are the frontiers for connectivity. Connectivity is moving up the stack to software running on commodity or cloud processors. Meanwhile the investment by mobile service providers on incremental delivered bandwidth to their subscribers is decreasing.

2. Money/Payments

Whilst a number of mobile money/payments were present the subject appeared lower key than it has been in recent years. One indicator of this, there were just 3 sessions discussing mobile money/payments. in the conference programme of 60 events.

Predictions
- The predictions for mobile commerce/ payments/ money were very strong with Ovum releasing their latest report:
http://www.ovum.com/press_releases/prepare-for-an-m-commerce-explosion/.
They predicting the following:
  - Of the three segments covered in the new forecast – m-commerce, person-to-person (P2P) mobile money transfers, and mobile proximity payments – m-commerce is the biggest in terms of users and transaction value.
  - The total global user base for mobile payments will increase from an estimated 689.99 million users in 2014 to 4.77 billion users in 2019.
  - The total global user base for m commerce was 452.78 million in 2014, this will rise to 2.07 billion users in 2019.
  - The global transaction value of m-commerce will grow from $50.92bn in 2014 to $693.36bn by 2019, as shown below:
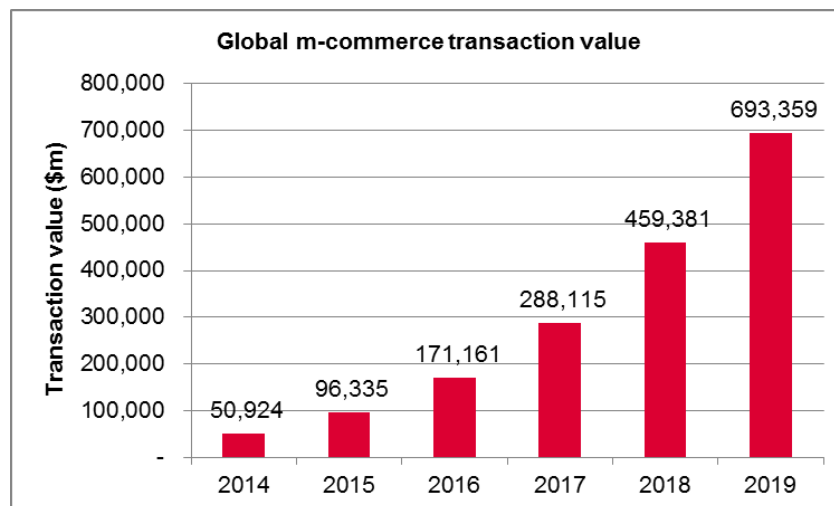
Mobile Wallets however were the biggest topic of the show. A review of the current positioning of mobile wallets from McKinsey (US) shows the following.

	Apple Pay	Android pay	Samsung pay	PayPal	Chase Pay	CurrentC	Capital One
Launch	September 2014	September 2015	September 2015	.	Summer 2016	2016	October 2015
Channels	In-app, In-store	In-app, In-store	In-app, In-store	In-app, In-store, Online	In-app, In-store, Online	In-store	In-store
In-store Technology	NFC, Secure element	NFC, HCE	NFC, Secure element, Loop Pay	Beacon, QR code	QR code, Scan receipt, Over-the-air	QR code	NFC
Encryption	Tokenized	Tokenized	Tokenized	Proprietary	Tokenized	Proprietary	Tokenized
Acceptance	NFC merchants (~200k), In-app	NFC merchants (~200k), In-app soon	~80% of physical merchants, In-app soon	Millions of merchants online, Some stores	MCX merchants (~100k)	MCX merchants (~100k)	NFC merchants (~200k)
Payment Method	Cards + loyalty	Cards, Smart Tap loyalty	Cards	Cards, ACH	Cards + loyalty	ACH, Loyalty	Cards
Platform	iOS	Android	Android	All	All	All	Android (Payment capability)
POS Payment Experience	Tap+ touch ID from locked phone	Unlock phone and tap	Unlock phone and tap	Unlock phone, start pp and scan	Unlock phone, start app and scan	Unlock phone, start pp and scan	Unlock phone, start app and scan
Online Payment Experience	Click + touch ID	Click + touch ID or password	Click + touch ID or password	Click, type email and password	Click		Click + touch ID or password

- www.Samsung.com announced Samsung Pay 'sometime in 2016' (likely to be September sources suggest). Samsung Pay will work via NFC/contactless and a new MST (Magnetic Secure Technology). This has been made possible by the acquisition of payments Loop Pay (see https://www.youtube.com/watch?v=bw1l149Rb1k). Samsung has already partnered with Visa and MasterCard on the project, and is working to get major banks involved. They claim that it is more secure than carrying a credit card in any case, with no account numbers held on the device and all sensitive data replaced with unique tokens. Payment security is also provided by Samsung Knox and ARM Trust Zone, which work together to prevent fraud and data theft.
  The service was launched 6 months ago in Korea and 5 months ago in the US. The company last reported 5m users, having processed more than $500m. Samsung did not provide any data on its user engagement, but it announced late in 2015 that 36% of Samsung Pay's user base was "active" and 10% used it daily. The health of Samsung Pay is claimed to stem at least partially from its wider acceptance in the US compared to Apple Pay. The main reason consumers don't use Apple Pay is they are unsure if the store accepts it or not, according to data from Infoscout electronics. However, in the UK most EPOS terminals already cater for NFC so the differential is less marked.

Pay with Fashion
- MasterCard and WiseKey announced a partnership that will enable contactless payments using a number of different fashion accessories. Right now the accessories are mainly from luxury brands, like Bulgari and Hubolt. This will allow you to use any accessory embedded with the technology, like a pair of gloves or sunglasses, to make a payment simply by tapping it against a compatible pay terminal. And if you're wearing Bulgari, you clearly like spending money, so why not wear something that makes it even easier to do so?

More Wallets
- It was also interesting to observe that some MNO's still believe that there is a play in providing their own wallet in certain territories. For example, customers of Hungarian mobile network operator Telenor can now make online and in-app payments using the Telenor Wallet and Master Pass. "The introduction of the new feature is unique as Telenor Wallet is the first MNO integrating Master Pass functionality into their wallet," MasterCard said. It requires consumers to register a bank card and other data necessary for the transaction once in the Telenor Wallet app and then simply choose the 'buy with MasterPass' option at the end of the shopping experience.

- Meanwhile the 120-member credit unions behind mobile payment platform CU Wallet can now offer MasterCard's MasterPass digital wallet service to their customers through their own branded mobile apps. CU Wallet's on-device application will enable consumers to use MasterPass to make purchases in-store, online or in-app with any payment card across multiple communications technologies, including NFC, QR/barcodes and remote checkout.

  One of the reasons for the rise in the availability of mobile wallets from 3rd Parties in certain territories is because the cost of the MNO's running expensive legacy Prepay business models means that the MNO's out payments don't work for the App's stores. As a result, aggregators are looking to integrate into the MNO's charge to bill systems but instead they are plugging into 3$^{rd.}$ party mobile wallets. Some examples discussed at the show by one payment provider included Pop Recarga & PagSeguro from Brazil or Doku from Indonesia.

Cars
- Meanwhile the car manufacturers are looking to make a play in the payments space. Ford announced Ford Pay, their virtual mobile wallet that forms part of the Ford Pass platform unveiled in January 2016, is to make its debut in Europe this year. New partners for the Ford Pass launch include oil and gas company BP and mobile parking payment provider Mobile City

- Meanwhile during MWC, Visa announced a deal with Honda and Park Whiz, that extends its Visa Token Service for auto manufactures to enable car-based commerce transactions. They demonstrated how you could pay for fuel in one click without leaving the car.

Through this partnership, Visa is bringing a range of digital payment solutions — which consist of new standards for Bluetooth and QR codes — in order to expand the availability of mobile payments for merchants and consumers.
http://www.pymnts.com/news/mobile-commerce/2016/visa-honda-partner-on-car-based-commerce/

PayPal

- PayPal were present in force talking up their NFC proposition. Having now been spun out from EBay they have the freedom to follow these types of opportunity. The company has in the past taken an anti-NFC stance, though then-president David Marcus revealed in April 2014 that the company was looking again at NFC as one of "three technologies that might truly change the retail experience as we know it." PayPal began piloting NFC in April last year when it reported a 40% growth in mobile payments.
It was announced at MWC that an upcoming version of PayPal's Android app is to bring with it NFC payments capability, the online payment giant announced 18 million consumers have also opted in to use the company's 'One Touch' mobile payment solution since its launch in August 2014 which is now being rolled out to an additional 120 markets, taking the total to 143 territories.
An upcoming version of the PayPal app will support NFC starting in the US and Australia later this year. The announcement follows PayPal's partnership with Vodafone to allow Vodafone Wallet users across Europe to make NFC payments with their mobile phone. PayPal is also working with leading telecom providers in Mexico and Brazil — Telcel and Claro — on their digital wallets and has over 140 million active users making purchases via mobile devices.

Carrier Billing Research

- Dimoco launched their 3rd. consecutive 'Future of Carrier Billing in Europe' report that was launched at the congress. Key points from the report included:
    - Mobile Market: Europe shows an average handset penetration rate of 126.3% with 1,030.90 million handsets available. 34.7% of adults own a credit card.
    - Digital Content: The European market for digital content (incl. games, music, video, ePublishing, adult content, dating services & others) is expected to increase from an estimated €29.2 billion in 2015 to €55.2 billion in 2020.
    - Digital Content billed via carrier billing: Juniper Research believes that the value of digital content in Europe billed via carrier billing will rise from just over €2.6 billion in 2015 to nearly €14 billion in 2020, an average annual increase over the forecast period of 40%.
    - Conversation Rates: First-time transaction rates for operator billing of 70-77% (vs. 10-12% on credit cards) and for repeat purchases of 80-88% conversion rate (vs. 20-25% on credit cards) have been measured.
    - Carrier billing incubators: The higher the smartphone volume, the greater the potential to generate revenues from 1-click payment using the mobile channel. BUT: The beauty of carrier billing is that billing digital content can be also done on feature phones.
    - Transaction Values: Average transaction values for carrier billed content remains significantly higher in Western Europe throughout the period, at over €4, compared to around €1.50 in CEE

Biometrics the way ahead?

- Meanwhile an article appeared in mobile payments today just before the show: http://www.mobilepaymentstoday.com/articles/are-physical-biometrics-really-the-way-to-go/
This is an interesting development as in the week before the event HSBC announced that they are moving to voice recognition for personal identity. Nuance the US based voice recognition organisation have been selected to deliver the service. The latest development comes as more customers move to bank on their mobile phones, prompting concerns over security. Francesca McDonagh, head of retail banking at HSBC UK, was reported as saying: "The launch of voice and touch ID makes it even quicker and easier for customers to access their bank account, using the most secure form of password technology — the body."

And Finally…

- These also present included POWA (on the GSMA stand), once feted as a darling of the UK tech scene and valued at in excess of £2bn by its charismatic leader and founder Dan Wagner, who announced that it was going into administration on the eve of the event. The company, founded in 2007 and based in London received £76m of funding in its A round in 2013, one of the largest sum ever raised outside the US for a tech organisation at this stage of development.

3. Advertising

- At the exhibition the relentless march of Ad tech continued although some of the players in the mobile ad space who have flexed their financial muscle at MWC in the past (read for that probably spent the best part of £1m+ at the event) were marked by their absence.

- Almost everyone (who remains objective) in the industry is pointing towards Programmatic advertising as being the future / answer (a reminder of programmatic, if it helps, is here: http://digiday.com/platforms/what-is-programmatic-advertising/).

  This year however the biggest issue on the minds of those within this sector of the industry is ad blocking. Not surprisingly the latest findings from the AOP's seventh annual *Content and Trends Census* reveal ad blocking is seen as a threat to the publishing business model (from 65% of the respondents) http://www.ukaop.org/aop-news/aop-content-and-trends-census-reveals-new-threats-to-the-digital-publishing-industry.
  Meanwhile the IAB share a very a similar view. http://www.iabuk.net/ad-blocking

- Meanwhile within the Conference we witnessed a 'lively' panel as Israeli ad blocker 'Shine' fronted up against the likes of Facebook, Yahoo & Nestle. Shine was proudly presenting its first European customer '3' and claiming that 'between 5-50% of a mobile data plan purchased by consumers was being used by advertisements themselves. However, ad blocking at the network level doesn't get much support amongst other the MNO's with O2's CEO Ronan Dunne making his views very clear at the event. http://www.campaignlive.co.uk/article/o2-ceo-dunne-urges-industry-unite-intrusive-mobile-ads/1384320 He also called for the industry to unite suggesting that the current environment is not tenable as ads are too intrusive and he called for the industry to produce more "lean advertising". He also stated "a lot of what can only be described as intrusive forms of advertising that are probably going beyond what customers reasonably want and expect."

  The bottom line is that the lifeblood of industry is the advertisers and publishers and the players between them need to act more responsibly and honestly.

In Summary

These are generally difficult times for MNO's, particularly in Europe where total revenues are now in decline. However, the mobile devices, networks and service providers are now delivering the types and levels of services we speculated were required for mass adoption a decade ago and for consumers a wide range of new exciting propositions are already available, or will become available in 2016. There is a mass of choice available to consumers whether for phones, wearables or payments or apps and usage will continue to rise promising an exciting future for the industry. The next 12 months promises to be another fascinating year.

Hugh Griffiths – March 2016

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