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## TPG, Optus set to challenge Vodafone for remaining 700MHz spectrum

Both TPG and Optus have emerged as potential bidders along with Vodafone for the 2x15MHz of 700MHz digital dividend spectrum that remained unsold following the 2013 auction.

While Vodafone had made a proposal to buy 2x10MHz of the spectrum, the federal government has now decided that there is enough competitive interest in the remaining 700MHz lots to conduct a new auction, most likely to be held next year.

Communications minister Mitch Fifield announced that the government will provide a formal direction to the Australian Communications and Media Authority on the reserve price, allocation limits and other relevant matters. Advice will also be sought from the Australian Competition and Consumer Commission on appropriate allocation limits for the auction.



The decision follows consultation on Vodafone's proposal to acquire 2x10MHz of unsold 700MHz spectrum by direct allocation for just under A\$600 million. "This consultation indicated strong market interest from other industry players. The government has determined that the competing interests would best be resolved through a competitive process," Fifield said.

According to TPG group general counsel Tony Moffatt, TPG first contacted the Department of Communications and the Arts about buying the 700MHz spectrum on 18 March 2016 – well before the government announced the consultation on Vodafone's proposal in May. He also said in a submission that he had advised the Department on 30 March that TPG would like to purchase all of the remaining 700MHz spectrum.

Optus is also believed to have indicated to the government that it was prepared to purchase all of the remaining spectrum, conditional on approval from parent company Singtel.

TPG CEO David Teoh backed up the carrier's intent following the latest announcement, suggesting that the company would be keen to augment its recent investment in 1800MHz spectrum by purchasing 700MHz spectrum. "The long term benefits for our company of securing this spectrum would be significant," Teoh said.

However, TPG has also called for some concessions from the government for new entrants along the lines of those being offered in Singapore. TPG has recently applied for spectrum in Singapore, where the government is planning to introduce a fourth player. “Access to spectrum represents the ultimate barrier to entry in this market. Existing providers, particularly those with substantial existing spectrum holdings, including in the 700MHz band, might have an incentive to limit the ability of a fourth entrant to secure spectrum. We will be making submissions to the ACCC that they recommend allocation limits that will have the best outcomes for competition and consumers,” Teoh said.

The company's earlier submission went further, calling for both Telstra and Optus to be prevented from entering the auction. In the case of Telstra, TPG said that it had already bid up to its maximum competition limit, while it also suggested that Optus had previously had the ability to take up to its competition limit in the auction. “Any move now from Optus to secure more 700MHz spectrum should be understood as a protectionist move to limit TPG’s ability to enter the mobile market,” the company suggested.

However, Optus corporate and regulatory affairs VP David Epstein rejected any move to prevent the carrier obtaining further 700MHz spectrum. He told CommsDay that there were clear rules set down for the auction in 2013 and that a consistent competition rule should apply for all of the 700MHz band, including the new auction.



“We'll certainly be looking at the new auction but the most important thing is that it's competitive, open and transparent,” Epstein said. He also welcomed the minister's decision not to proceed with a direct sale to Vodafone, arguing that it would not have been fair to either Optus or Telstra.

“We objected to Vodafone's proposal because they were seeking to obtain the 700MHz spectrum without going through the risks that other parties took,” he said, noting that at the time there were few handsets available for the 700MHz band.

In the 2013 auction, Telstra bid up to its competition limits. However, it said it was awaiting further details of the new auction process and would consider how it might be able to participate. “This decision upholds the integrity of the spectrum allocation framework while ensuring that this spectrum can be put to its highest value use,” Telstra said.

Vodafone chief strategy officer Dan Lloyd said that following the government's decision to go to auction, the mobile challenger was now considering its options. In its earlier submission to the consultation, Vodafone had argued that its proposal was in the public benefit and at the right price. “VHA is the cornerstone of competition in mobile services, the critical third network operator ensuring no mobile telecoms duopoly occurs,” it stated.

Telstra and Optus were the only two bidders at the original 700MHz auction in 2013. They paid a combined A\$1.9 billion for spectrum at the time.

Geoff Long

## Department wants to beef up, extend superfast network obligations

The Federal Department of Communications wants to strengthen the regulations on superfast broadband networks which compete against the NBN. New draft carrier licence conditions circulated on Friday are ostensibly designed simply to extend the current wholesale separation requirements for another 18 months past their original December 2016 expiry date, but also contain some fine print designed to beef up the transparency requirements on superfast carriers.

The new conditions would require affected operators to report on the location of their networks by suburb or postcode designation, the number of customers on those networks and the identities of the retailers who purchase network services. The first report would be required for 1H 2017 and then every six months after that.

TPG would ostensibly appear to be the main target of the revised conditions but the new carrier licence condition draft's accompanying regulatory impact statement makes the startling revelation that no operator is currently registered as a designated functionally separated carrier under the conditions.

“Carriers subject to the carrier license conditions (CLCs) were required to register with the ACCC. To date, no carrier has registered, meaning that all designated networks must now be operating on a wholesale-only (structurally separated) basis or are operating in breach of the CLCs. TPG advised, early in 2015, that it had disposed of its retail business, meaning it was operating on a wholesale-only basis and did not need to comply with the functional separation obligations under the CLCs. It has since created a functionally separate wholesale company to supply wholesale Layer 2 services,” the statement says.

TPG set up a separate FTTB wholesale company with discrete management earlier this year which services TPG along with other clients such as Wondercom with NBN-equivalent wholesale access pricing and a CVC charge of just \$4 per megabyte. Prior to that it had offered services via its AAPT unit.

Assessing the costs of the proposed conditions, the Department says “The new transparency obligations involve a new regulatory burden, however the associated costs are likely to be negligible because carriers would only have to sign a declaration and provide information which should already be collected in the ordinary course of business. The Department estimates that this work will take about 15 hours a year to complete

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for each carrier that is affected. This equates to a regulatory burden of about \$980 per year per affected carrier. We estimate that there are at most four carriers that are likely to need to provide additional information.”

Eventually the plan is to legislate what should be relaxed requirements on superfast broadband obligations, albeit offset by a new levy to help subsidise NBN’s loss making operations which the current conditions are designed to protect.

Grahame Lynch

## **Infrastructure Victoria calls for public-private partnerships on telco projects**

Infrastructure Victoria has recommended that the state government improve connectivity across Victoria – particularly in major economic centres and rural and regional areas – by using public-sector assets in partnership with private telecom providers. The recommendation came in a draft of Victoria's first state-wide, cross-sector infrastructure strategy for the next 30 years. Infrastructure Victoria is an independent statutory body tasked with providing advice on the state's infrastructure needs.

Infrastructure Victoria said the recommendation would require a coordinated, partnership-based approach, with departments and agencies working with each other and with other levels of government and the private sector to identify and pursue opportunities to provide better ICT services.

The draft strategy – now open for consultation – looks at infrastructure for the state across nine sectors including telecommunications, education, transport and energy. The independent authority has put forward 134 recommendations worth around \$100 billion to address the current and future infrastructure needs across metropolitan Melbourne and regional Victoria. It noted that 70% of recommendations have state-wide relevance.

According to the draft, the state government has some important levers for improving ICT connectivity across Victoria. “It is both a communications infrastructure owner and a significant purchaser of ICT services. We’ve recommended government use these levers to influence the shape of Commonwealth initiatives and private sector ventures to get better outcomes for all parties and for the people of Victoria,” the authority said.

The draft points out that VicTrack operates Victoria’s second largest telecommunications network, providing primary telecommunications services for the transport sector. Included in its asset portfolio is a network of base stations and towers running along train lines.

“Opportunities therefore exist to partner with private communications providers to upgrade these assets for mutual benefit. There are also potential opportunities arising from the expected transition of emergency management communications from existing traditional radio networks, which cover 96 % of the land mass and 99% of the population, to new mobile systems that will enable greater interconnectivity and data shar-

ing,” the draft suggested.

It said that the impact of such initiatives could be greater if the state government took a more coordinated, proactive approach to using and integrating its existing ICT networks and leveraging off the public sector’s combined purchasing power.

Infrastructure Victoria is inviting feedback on the draft strategy, which will be delivered to the Victorian Parliament in December this year. The consultation period closes on 31 October 2016.

Geoff Long

## **Vodafone quadruples Canberra capacity**

Vodafone has completed a 4G network upgrade in Canberra, pressing into service the 1800MHz spectrum in the area that it bought at auction earlier this year to quadruple local capacity. And the firm is also building out local fibre to prepare for 5G.

All three of Australia’s mobile carriers shelled out for 1800MHz spectrum in the auction this February, along with surprise contender TPG. Vodafone spent the least of the four bidders, at A\$68 million. However, it said at the time that it had carefully targeted its bid to increase spectrum holdings in areas complementing its existing network, including Canberra.

That has now pulled through into substantially beefed-up coverage in the nation’s capital. Vodafone secured an extra 15MHz of 1800MHz in the area, a hefty increase on its previous 5MHz local holdings, and has upgraded 84 sites to use the new spectrum. The firm said that the fourfold capacity boost would in practice allow for mobile data to be delivered “at speeds up to six times faster than before.”

“Through our investments, we have been able to drive a wide range of upgrades to deliver greater reliability, speed and performance. If you look at where people live and work, Vodafone is on par with major rivals. And we are still building,” said CTO Kevin Millroy. “We are continuing to enhance our network with features including Voice over 4G which provides clearer voice calls, shorter call connection times and the ability to use 4G data while making or receiving a calls.” Vodafone has further plans to upgrade another 19 Canberra network sites over the next twelve months. And Millroy added that the carrier had started building out its fibre network in the area, as well, in preparation for future mobile technology such as 5G.

Petroc Wilton

## **Aus Google handset users embrace ecosystem, but mainstream will be challenge for Pixel**

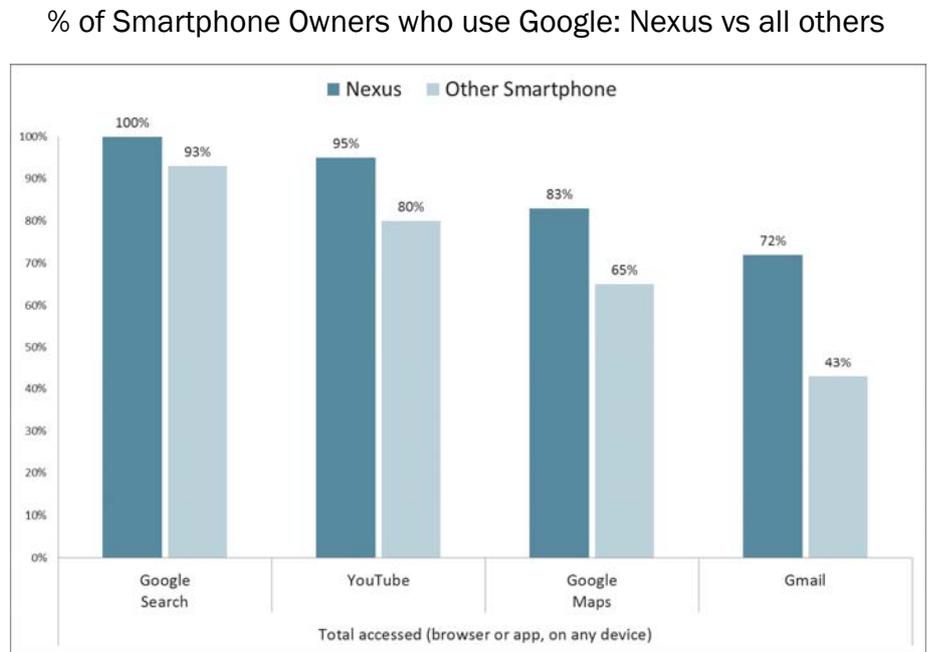
New data from Roy Morgan Research has found that the relatively small number of Australians who own a Google Nexus handset are by far the most avid smartphone users of other Google products. That effect is likely to become yet more pronounced with Google’s Pixel device – but the big challenge for the new handset will be breaking into the mainstream.

According to the research firm just 115,000 Australians of fourteen years or older

actually have a Nexus, Google's previous effort to crack the handset market. However, Roy Morgan said that base of Nexus users were more likely than those of any other smartphone brand to access Google's search site, email, maps and video platforms across a four-week average period.

Based on its Single Source survey polling just under 10,000 Australian smartphone users - including 51 Nexus users - from July 2016-June 2016, Roy Morgan found that more than 99.5% of Nexus owners used Google Search in some form compared with 93% of other smartphone users. "95% of Nexus owners visit Google-owned YouTube in an average four weeks (compared with 80% of other smartphone users), 83% use Google Maps (vs 65%), and 72% use Google's Gmail (vs 43%)," it added.

The research firm also found that despite only making up a fraction of the market, almost four in ten Nexus users were what it dubbed 'Technology Early Adopters' - first to purchase new technologies, well-educated and curious about new technology, with high incomes and "risk-taking tendencies" - more by some distance than users of other handset brands.



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first to purchase new technologies, well-educated and curious about new technology, with high incomes and "risk-taking tendencies" - more by some distance than users of other handset brands.

Still, according to CEO Michele Levine, the big question remains whether the Pixel will do what its Nexus predecessor could not: push Google into the mainstream handset market.

"Nexus users seem to have found a way to simplify and centralise their complicated online presence: to visit Google on a Google handset with a Google operating system. However Nexus remained a niche handset... the question now is whether Pixel, unlike Nexus, will compete in the mainstream," she said.

"Google already dominates, or at least has a foothold, in so many digital and physical areas: from online search, email, news, videos, music and shopping to Chromecast, virtual reality headsets, its new voice-controlled 'smart home' technology Home and - perhaps in the not-too-distant future - even cars. The clear missing element, given our ever-increasing usage of mobile phones, is a totally Google handset."

Petroc Wilton

## **Downer to reduce role in UFB installations, Visionstream to fill void**

Contracting firm Downer has again reduced its role in the New Zealand UFB rollout. Chorus announced that Visionstream would take over fibre installations in areas that are currently being serviced by Downer across the country.

In May this year Downer stepped away from fibre installations in Wellington, the Kaitiaki Coast and Manawatu. It has now decided against re-tendering for work in other areas including in the Hutt Valley, Masterton, Napier, Hastings and Gisborne in the North Island and Ashburton, Timaru, Oamaru, Queenstown, Invercargill, Dunedin in the South Island.

Chorus said that Downer had chosen to concentrate on other aspects of its relationship with Chorus, including the copper network and the communal UFB build. However, it expects that some Downer technicians will be affected by the change.

Chorus GM customers services Nick Woodward said that with demand for fibre increasing significantly, technicians may have opportunities either to move to Visionstream or remain with Downer and continue to work on the copper network.

“Chorus, Visionstream and Downer are all committed to a smooth transition with the minimum of disruption for our technicians,” he said.

The change means that Visionstream will now cover around 80% of the areas of UFB that Chorus is responsible for, with the balance being held by Broadspectrum, and Brisbane-based multi-dwelling unit specialist UCG.

**GUIDANCE UPDATE:** The changeover has also had an impact on Chorus' guidance. It said that it now expects to be able to hold average connection costs per unit flat in nominal terms across the term of this contract rather than secure further economies in connection costs. As a result, Chorus now expects to track at the top end of the total programme view for the average cost to connect standard residential premises of NZ\$900 to \$1,100 in 2011 dollars.

Chorus said that it was separately assessing future capitalisation policies in relation to provisioning costs that are currently expensed and were not in the scope of guidance at the time of demerger. The company said it may provide an update to guidance when this work is completed later in FY17.

Geoff Long

## **Asia, content and AI taking centre stage in mobile ecosystem: GSMA**

Asia, the smartphone, content and services, mobile broadband and artificial intelligence are now the key forces impacting the global mobile industry today and in the lead out to 2020, according to the 2016 edition of the ‘global mobile trends’ report by the GSMA.

The inaugural edition of what the GSMA is positioning as a flagship report identi-

fied the five 'key megatrends' as the driving forces behind the mobile ecosystem, painting both opportunities and challenges for operators.

"In this year's report we demonstrate evidence of a major shift in mobile to Asia, particularly India, which has now overtaken China to become the industry's key growth market, and the transition to a smartphone-powered 'mobile-first' internet, which is delivering a new generation of internet users," said GSMA chief strategy officer Hyunmi Yang. "The study also underscores the role of artificial intelligence and the Internet of Things in ushering a new era of automation."

Overall, the world's mobile industry was projected to sign up an additional 1.1 billion new subscribers by the end of the decade. Of those, 60% is expected to come from six Asian countries, led by India, which was charted to account for a third of the new users, followed by China (just under 20%) and Indonesia, Pakistan, Bangladesh and Myanmar.

Beyond subscribers, India was also viewed as a huge growth opportunity for smartphone sales. With smartphone adoption rate in India at just 25%, the country is delivering annual unit sales growth rates of 30%, the report noted.

That said, the smartphone is already "the most commonly owned consumer electronics device" in the world, according to the report - which cited penetration figures from the UK (71%), Europe (60%-70%), US (75%) and some Asian countries South Korea and Singapore (80%). And with smartphone prices expected to continue their decline, the report predicted similar levels of adoption by 2020 across all economies, including emerging markets with per capita gross domestic product of below US\$10,000.

At least two consequences of the smartphone wave were also identified by the report. For starters, mobile has become the prime access medium for the internet. According to the report, new mobile subscribers are more likely to be 'mobile-first' or 'mobile-only' internet users, a trend that will push the percentage of users getting online from mobile connections to 60% by 2020, from 46% now.

Smartphones and their powerful processors will also give users access to more content and services, which are expected to replace revenue from traditional mobile voice and messaging, the report added. By 2025, legacy revenue streams will shrink to 38% of the overall market, from 41% today, while revenue from content services such as Netflix and Spotify is charted to grow more than fivefold, from 3% today to 17%, the report said.

Lastly, the report pointed to artificial intelligence as an emerging influencer for the mobile ecosystem. AI, the report noted, will "accelerate a number of emerging sectors, including connected cars and smart homes." While not specific to mobility, the researchers pointed to AI-powered platforms like Apple's Siri and Amazon's Alexa (and no doubt the new Google Assistant) as a driver for a new generation of 'voice interface' driven applications.

Tony Chan

## **Indian spectrum auction falls short as carriers ignore 700MHz band**

India's latest spectrum auction raised US\$9.87 billion, well short of the government's valuation of US\$84 billion as carrier bidders ignored the most expensive blocks.

The auction, which lasted 5 days, saw all seven carriers buying some spectrum, but no takers for the expensive 700MHz and 900MHz blocks. Instead, the carriers targeted spectrum at the 800MHz, 1800MHz, 2100MHz, 2300MHz and 2500MHz bands.

Vodafone was the biggest spender, splurging more than US\$3 billion on 2 x 86.6MHz of paired FDD spectrum and 200MHz of TDD spectrum across the 1800MHz, 2100MHz and 2500MHz bands.

India's biggest mobile operator Bharti Airtel spent US\$2.14 billion on 173.8MHz of spectrum, while Reliance and Idea Cellular spent US\$2.05 billion on 269.2MHz and US\$1.92 billion on 394.2MHz respectively.

Tony Chan

## **LOGICALIS AUS NAMES THOMAS DURYEA VETERAN AS COO**

The Australian arm of global IT and managed services provider has named Michael Chanter, previously national GM of local ICT and professional services specialist Thomas Duryea, as its COO. Logicalis acquired Thomas Duryea in December last year, part of a push to scale up Logicalis to a A\$300 million business in Australia; as part of that, Chanter will lead sales, marketing and delivery across both of the combined businesses. Meanwhile, the firms are stepping up their timeline for full integration; Logicalis CEO Mark Rogers said that they were ready to "bring the two organisations together to build a stronger customer value offering, a combined go-to-market strategy, and a strong collaborative business culture."

## **FETCH TV ADDS CNN INTERNATIONAL TO PLATFORM**

Fetch TV has added CNN International to its entertainment pack bundles at no additional cost. The TV news brand reaches more than 425 million households around the globe, including more than 77 million across Asia Pacific. Fetch TV CEO Scott Lorson noted that it was the third channel that the platform has launched this year, joining Comedy Central in April and Spike in June. Lorson also noted that other new content was still to be announced. Fetch TV is available via ISPs including Optus, iiNet and Dodo, and retailers Harvey Norman and JB-HiFi.

## **AIR NEW ZEALAND TO OFFER INFLIGHT WIFI ON TASMAN FLIGHTS**

Air New Zealand is the latest airline to announce plans to offer inflight Wi-Fi. Starting in 2017, the airline will introduce the service initially on flights between Australia and New Zealand, according to CEO Christopher Luxon. He said Air New Zealand was in the final stages of commercial negotiations with Inmarsat and Panasonic Avionics for the service. Internet connectivity will be supplied by Inmarsat's new global GX satellite

constellation and integrated with Air New Zealand's in-cabin Panasonic Avionics technology. Proving flights will begin in the second half of 2017 and progressively made available on Tasman, Pacific Island and long haul jet fleets from the end of next year. Domestic services would follow in 2018. Air New Zealand expects to release details of its operating business model for the service in the first half of 2017.

## **SAMSUNG BUYS INTO AI**

Samsung announced it has purchased artificial intelligence firm Viv Labs as part of a strategy to introduce AI into its devices and services. According to Samsung mobile communications business CTO Injong Rhee, Viv was founded by the same people who developed Siri and sold it to Apple.

## **COLUMN BY TONY CHAN**

### **Should you be afraid of a big bad Google?**

I recently spent a couple of days in Silicon Valley getting excited about artificial intelligence, learning how it works and how it is being applied: powering new security solutions, generating creative output from mobile applications and a myriad other uses from stock trading to medical X-ray analysis.

But a shadow was cast over everything I learnt at the NetEvents conference in Saratoga, California with the launch of Google's new AI-power service, Google Assistant. The reason is how AI works. Beyond the neural networks that actually do the processing in the back, AI is actually about data – and Google has a lot of data on every one of us.

One AI example that stood out came from cybersecurity firm Cylance, which is using AI to defend end-points against malicious code. The way Cylance's solution works is through the real time analysis of binary computer code with an AI engine. First the system gathers and “clusters” code groupings – basically recognising patterns and then highlighting them if they are new. Then Cylance labels those code patterns as either good or bad.

Explaining the process, Cylance CEO Stuart McClure pointed to a way to teach a computer how to label a room full of people on their gender.

“I would look in this room and I'd say, the first feature might be to determine between a male and a female in this room I'm going to measure hair length. That's a feature. I'm looking around the room. I might get pretty good here. Pretty good. Maybe not 100%, maybe not 95, but probably about 90%,” he explained. “But if I then took other features that were very indicative and I had a computer go through and look at all the images of everybody in the room and be able to tell you that, well somebody that has a beard, facial hair, is more indicative of a male than a female. There's another feature. Now imagine, those are two features and you could probably get to 99% determination of male or female in this room.”

On just those two features, such a system would generate a lot of false positives; a

man with long hair and no facial hair might be mistaken for a female, for example. But the more identifiers the system was fed to look for, the more its accuracy would increase. At Cylance, they have built a system that checks incoming binary code against over 5 million unique features, which the firm has labelled either good code or bad code. The system is still not completely autonomous. While the AI can be programmed to detect new code patterns, it still requires human intervention to determine whether the pattern is good or bad (male or female, in the gender analogy above).

**AI OR YOU:** This is the kind of system that Google is offering with Google Assistant, which theoretically will have access to all your personal data. That could include location data on your Android phone, your search and browsing history, your music catalogue on your Google Home device, your bank accounts and so on – all united under a single repository.

More importantly, the promise that Google Assistant will get better over time means that all that data will be kept stored somewhere as the knowledge database for each users' Assistant.

At this point, the primary goal of Google seems to be simply to deliver better ads to the user, which it already does through search histories. And users will be offered the option to delete past interactions with Assistant, as well as to limit its access to personal data. Yet, there are a lot of default settings out there, such as the location history inside both the Android and iOS platforms, which gathers personal data without asking first.

As a virtual assistant, Google's application of AI isn't programmed with any specific intent in mind. In a sense, it puts the programming component of AI at the hands of the user, since they will ultimately be the ones inputting the data, and deciding what is good and what is bad.

But as AI guru and Fast Forward Labs president Kathryn Hume pointed out, it's not the computers that are dangerous but people.

"Let's take an example of using algorithms to try to automatically hire somebody into your company or recruit students to your school or even give a loan for a credit application. If we try to automate that, the systems aren't that smart. They go out and they look in data sets," she said.

"If in the past, Stanford has tended to recruit a certain type of candidate – they've tended to recruit relatively wealthy white males, let's say for sake of the example – we go into the system and we say here is a model for the type of candidate we're looking for. These are the decisions that humans have made in the past. The algorithm will go and they'll say 'okay cool. I'll go find candidates that look like that. I'll base my decisions based upon what the humans did.'

"Then the algorithms come back and they say here is a pool of 95% rich white males that we suggest you recruit to your school, precisely because if we think about a normal distribution this is where the bulk of the features tend to lie. So if we relegate our decisions to the algorithms they tend to propagate and amplify the stupid decisions we as humans have made."

At the end of the day, it is probably too early to be threatened by the Google Assistant. But as it gathers more and more data on users, will it simply reinforce our bias, limit our choices and ultimately attempt to think on our behalf?