

INFO5992 Introduction to IT Innovations

Week 3

Tutorial 2: Dominant Design in the Smartphone market

Combined Summary of the tute classes

1. The Android architecture is becoming the clear dominant design in the smartphone OS market.

What are the main reasons that led to the dominance?

- Becoming dominant, perhaps, in the OS market share only. Apple looks likely to be a powerful design of its own, in particular, in the high-end market
- Range of prices, different to Apple focusing on the high end market, many Android phones are more affordable
- Vendor support and can be customised by the smartphone manufacturers.
- Open architecture/open source – Many dominant design is an Architecture so that the ‘standard’ can be established
- More choice – brands, screen size, Strategic innovations to differentiate from closed environment of iOS
- Challenge with Android OS is the issue with fragmentation and ‘forking’ of the OS which are adding complexity to the developers. For example, Fire OS is a fork of Android customised for Amazon. Compatibility of Apps is becoming more problematic where there are so many variants of Androids
- Fast second – Came out shortly after iPhone, learned from iOS
- For app developers it is easier to get Android apps approved than iOS apps

2. In the short article, Android’s strategy for the VR is following similar principles. Do you think this strategy will become the dominant design in the VR space? You may think about this in the context of concepts learned in the class including: ‘architecture’, ‘standards’, ‘network effect’ and ‘self-reinforcing cycle’.

- Advantages:
 - Open architecture/open source
 - Vendor support – many hardware manufacturers
 - Compatibility
 - Connection sponsorship (as in BBC and other big companies want to participate)
 - Strong network effect: many would easily try their VR product.
 - More accessible price – most people already have a good enough smartphone, so the VR addition is relatively cost-effective
 - Simplicity as there is no need to ‘setup’ anything – just another App on your smartphone
- Disadvantages:
 - Smartphones and VR are very different and Android not a VR specialist;
 - The smartphone VR user experience might not be as good as a solution from a company specialising in VR, e.g. Oculus, therefore users might not adopt Android VR
 - Hardware performance is still a major issue and PCs have a performance advantage
 - They entered a bit late (already large companies in Oculus/Facebook, HTC/Sony and Samsung)

3. In the short article on Windows 10, the author suggests, “*Windows 10's Smartphone Failure Is Microsoft's Greatest Opportunity*”. Do you agree with this comment? Can you answer in terms of the dominant design concepts above?

Microsoft previously held a commanding position in the US smartphone market only before the market was disrupted by Apple and Google. Many limitations such as lack of third-party support: handsets only worked with Microsoft products, made it difficult for developers to continue to improve and innovate technologies. It is almost impossible for Microsoft to win back in smartphone market.

- Opinion: Yes
 - Microsoft is currently focusing on Cloud as a service which have better opportunities; The dominant designs have not yet emerged.
 - Provides easy integration of cloud services with other OSs including Android and Mac.
 - Applications such as One Drive and One Note are popular and have strong features.
- Opinion: No
 - Many of Applications (e.g. Microsoft Office) are not free, which may make people hesitate to use.

4. In the long article, the conclusion made is that *'product differentiation still characterizes the competition among manufacturers and a dominant design has not yet emerged'*.

a. Do you agree with the assessment? What has changed since the paper was published in 2015?

- Its interesting to note how quickly the smartphone evolved. The paper discusses designs evolution in the early 2010s, which focused a lot on the hardware as the hardware tech was the main competitive advantage for a new smartphone e.g., better screen, better batter, better connectivity, better weight etc. Since then, when we look at modern smartphone differentiation, hardware still plays a part e.g., better camera, VR support, better screens, however, the design emphasises has shifted more to the software e.g., better OS, better Apps, better cloud services, intelligent features, etc.
- More intelligent features – Voice Recognition (Siri), Use of machine learning algorithms (e.g. deep learning): recommendation – the phone identifies a caller who isn't in our contact list, get a shortlist of the apps that you are most likely to open next, and get a reminder of an appointment that you never saved.
- In overall, since the paper, it could be said that there have been less innovations and more incremental changes. Example is the iPhone evolution where earlier generations introduced remarkable changes but recent ones has been not as distinct. We may be reaching the plateau of smartphone innovation – the future is exciting!

b. If we continue to follow the concepts in the paper into the smartphone market of 2016, is there an emergence of a dominant design?

- Not by the classical definition – there is a duopoly in dominant design because manufacturers/vendors have to support both Android and iOS while we have passed the innovation stage
- There is still new smartphone technology every day, therefore it is hard to say what the dominant design is. New or Old vendors are introducing new innovations e.g., Nokia is

coming back, e.g., <http://www.androidheadlines.com/2016/08/pureview-co-designer-leaves-microsoft-to-rejoin-nokia.html>

- The paper is that the chosen design convergence criteria are superficial, the paper did not look at internal hardware components (example: ARC architecture based processors versus others such as Intel) and value chain (example: Samsung manufacturing components even for Apple).
- Android/Java virtual machine still has unresolved problems which frustrates users and they might turn away from Android again.

c. Does the article follow the design dominance technology cycle?

- Opinion: Yes
 - The horizontal and vertical innovations seems to follow the technology cycle.
 - The competition for services, efficiency and prices seems to follow.
- Opinion: No
 - A dominant design for smartphones has not emerged yet