

Platform Competition and the Product Lifecycle

Competitive Strategies Within and Between Platform Markets

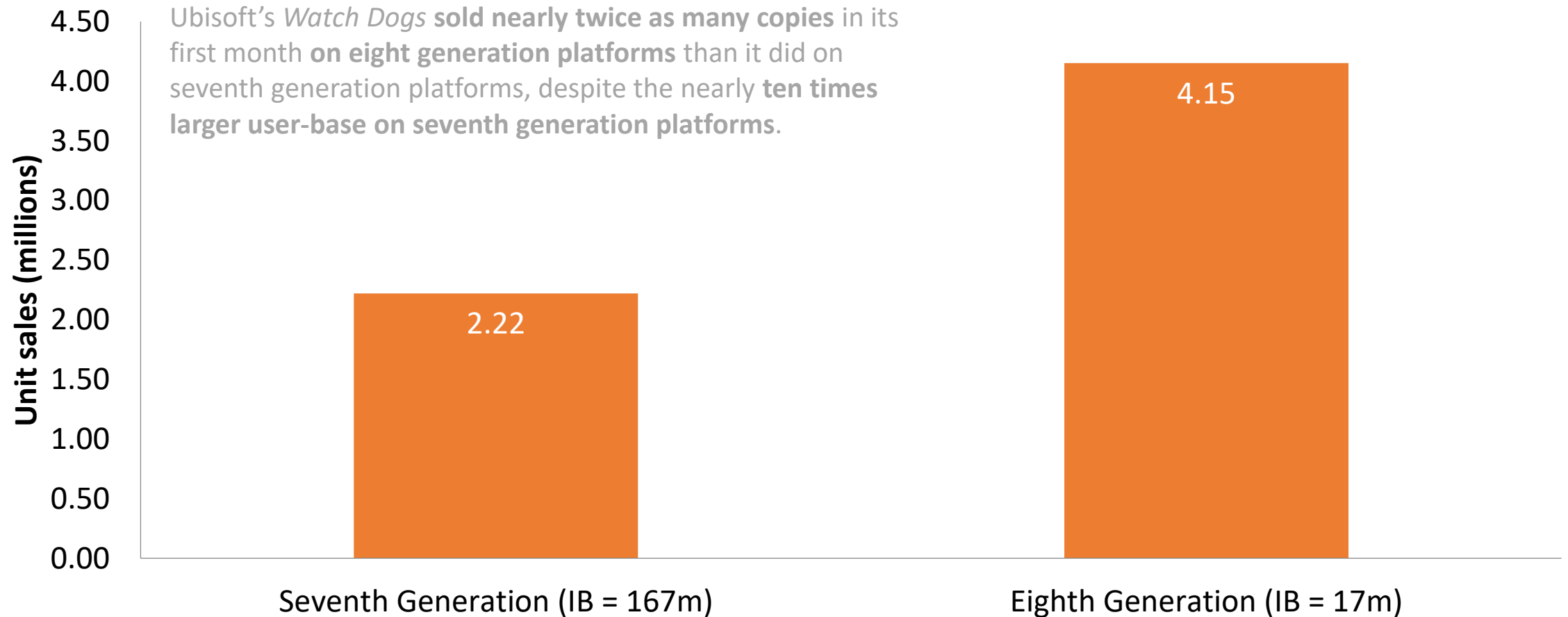
Lecture 4

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WATCH_DOGS



Watch Dogs' first month unit sales





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Platform ecosystems dynamically evolve. As platforms become more widely adopted by end-users and complementors, platforms must adapt their governance frameworks in response. Such changes structurally affect competitive dynamics for complementors.

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Platforms evolve over time

- Platform ecosystems are dynamic entities that change over time (Gawer & Cusumano, 2014). Besides *endogenous* platform evolution in the form of changes in platform design and governance strategies, platform ecosystems coevolve through the *exogenous* evolution of end-users and complementors (Tiwana *et al.*, 2010):
 - Platforms as regulators
 - Platforms as products
 - Platforms as markets
- Platform evolution not only affects competition *between* platforms, it importantly affects competition *within* platforms

Platforms as regulators

- As platforms grow their user-bases and stock of “killer-apps” over time, they become increasingly less reliant on new complementors
- Over time platforms gain bargaining power over complementors:
 - Necessity to invest in complementors goes down
 - Propensity of competing with complementors goes up
 - Amplified by complementors’ relative over-entry
- These dynamics are moderated by the platform’s business model:
 - Some platforms have end-users as *money-side* (e.g. Apple iOS, Netflix)
 - Some platforms have complementors as *money-side* (e.g. consoles, Steam)

Evolution of governance frameworks

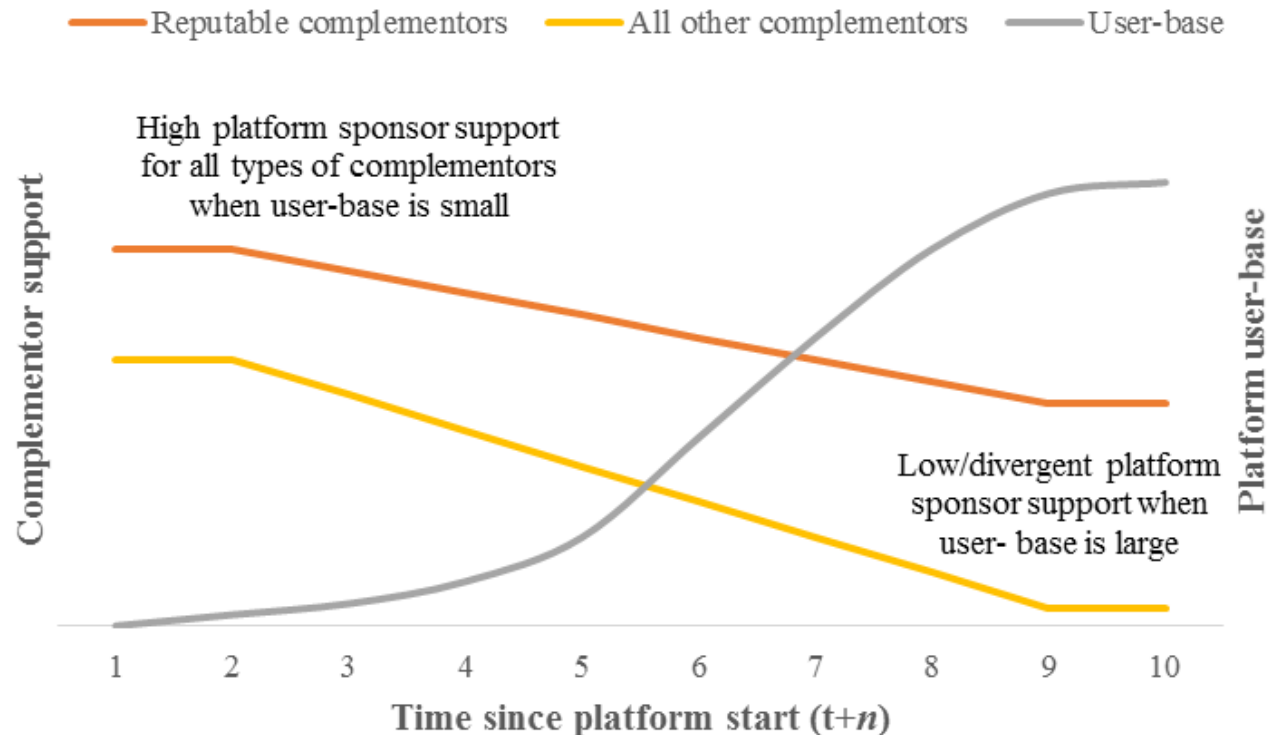


Figure adapted from Johns, 2006; p170.

Platform governance evolution:

- Early on, platforms need complementors to solve “chicken and egg” problem, resulting in **strong overall support** (subsidies, marketing, selective promotion, contractual terms)
- As platforms evolve and user-base grows, overall **dependency on complementors goes down** and so does platforms’ support
- Support for complementors becomes **more directed** later in platform lifecycle, mostly **benefitting a select group** of highly reputable complementors with high quality products

Case in point: Apple's iOS

Overview of governance changes:

- 2009 Allow for in-app purchases
- 2010 Allow for in-app advertising
- 2012 Implement matching of consumers and apps through Editor's Choice, Top Charts, Free App of the Week, and Genius
- 2013 Enable user reviews for apps
- 2014 Offer consumers 14 days no-questions asked refunds on app purchases
- 2015 Search algorithm optimization improving matching of popular apps (e.g., taxi → Uber)
- 2016 Introduce paid search results

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A shopper tries out the new Apple iPhone 6 at the Apple Store on the first day of sales of the new phone in Germany on September 19, 2014 in Berlin, Germany. Sean Gallup—Getty Images

BUSINESS

A Big Change Is Coming to Apple's App Store

Lisa Eadicicco
Jun 08, 2016

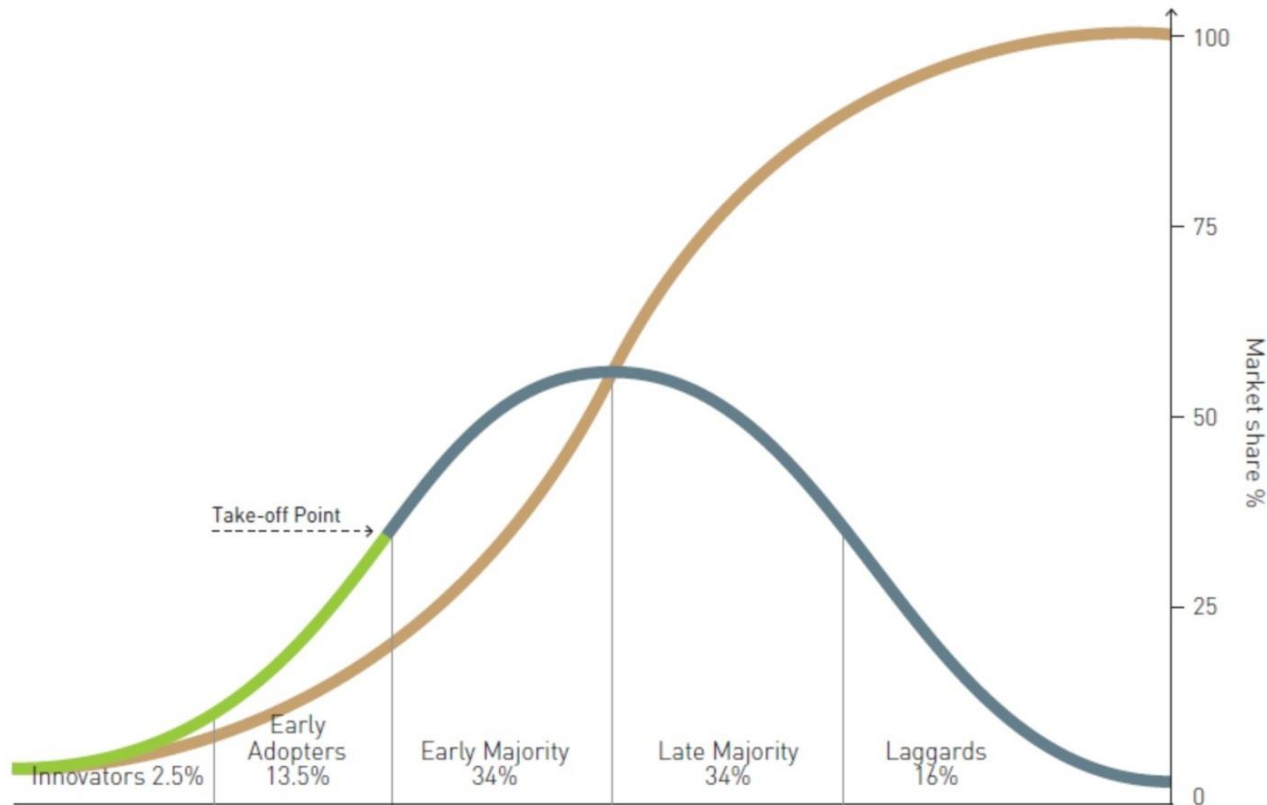


Apple is making a change to the way search results appear in its App Store.

Platforms as products

- Early platform adopters differ from late platform adopters:
 - Early platform adopters have a higher willingness-to-pay for innovations than late platform adopters
 - Early platform adopters have a higher preference for novelty and display lower risk aversion than late platform adopters
 - Early platform adopters search deeply and independently for innovations while late platform adopters search locally and socially
- When a new/next generation platform is introduced to the market, some consumers (mostly early platform adopters) will migrate
- Complementary goods are contingent adoption decisions

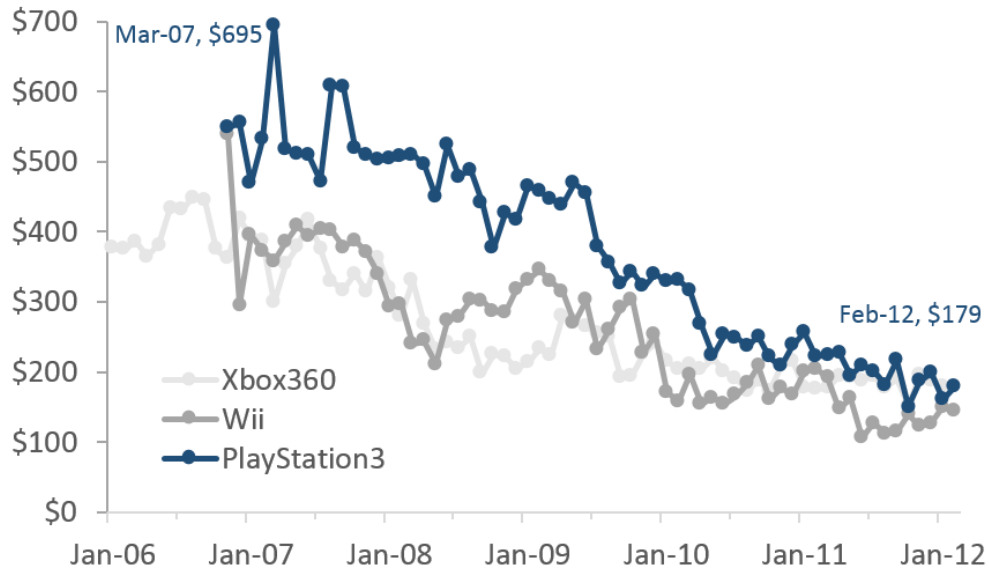
Evolution of user-base composition



Early adopters of a technology display qualitatively different characteristics from late adopters (Rogers, 2003):

- Early adopters adopt new technologies (such as platforms) first
- Early adopters have a greater willingness to pay (heavy vs. light users – McPhee, 1963)
- Early adopters are less risk averse
- Early adopters have a stronger preference for novelty (innovation)
- Early adopters “dig deep” for new information about the innovation
- Early adopters are often the first to migrate to a next generation platform

Despite constantly lowering the price for *PlayStation 3*, Sony packed their stock keeping units (SKUs) with **increasingly greater functionality**. Furthermore, the **functionality changed** (e.g., type of games, hardware). Both allowed Sony to **better serve late adopter** consumers who hadn't yet purchased a PS3.



PS3 SKU timeline

2006: PlayStation 3 launches with 20/60 gb models no peripherals included in box

2007: 60 gb bundle with two controllers and two games included (*Motorstorm* & *Resistance*)

2008: 80 gb bundle with one game (*Metal Gear Solid 4*) and dual shock controller included

2009: 160/320 gb new 'PS3 Slim' hardware bundles with one controller included

2010: 320 gb 'Move' bundle with Move hardware, one game (*Sports Champion*) and one controller included

2012: 500 gb new 'Super Slim' hardware model with one controller and 1yr PS+ subscription included

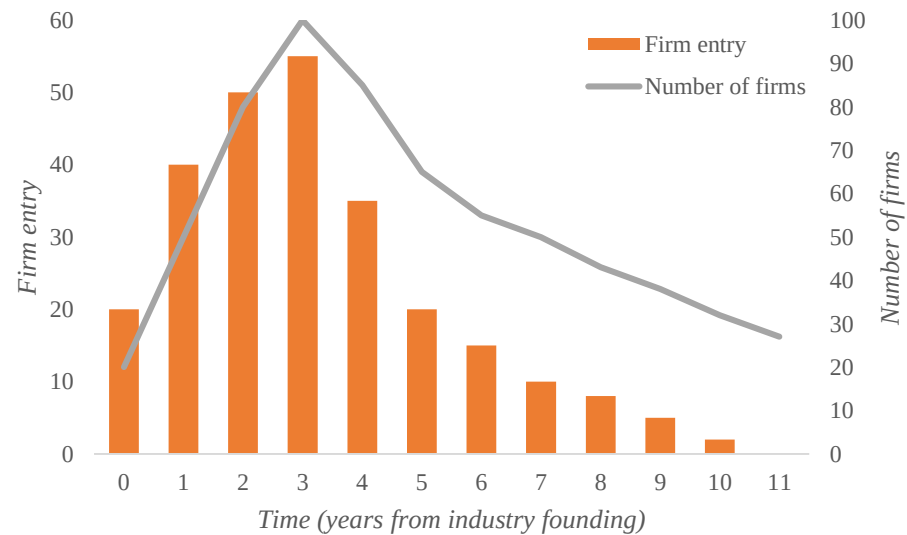


Platforms as markets

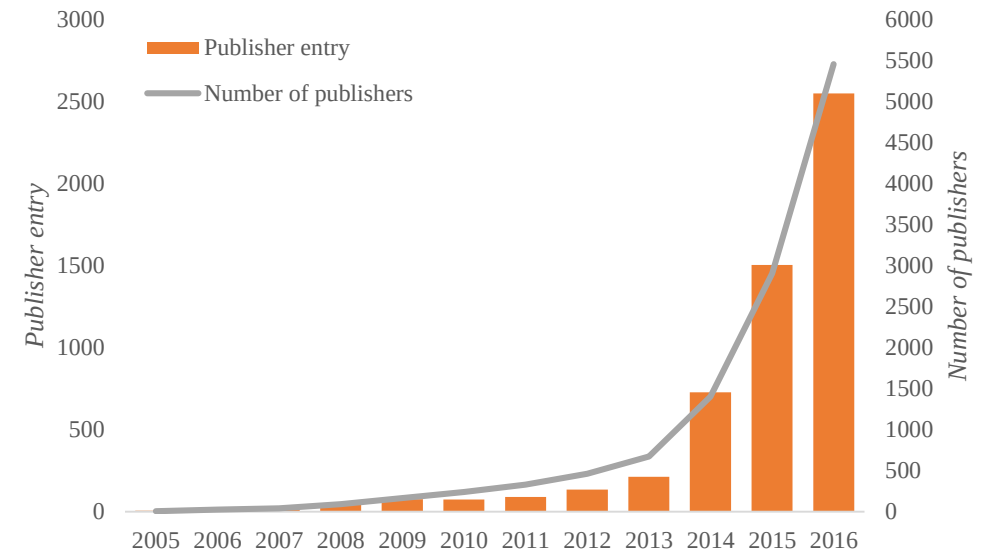
- Most platform complements have very short lifecycles (e.g., months) whereas most platforms have much longer lifecycles (e.g., years)
- The lifecycle of a complement is thus embedded into the larger lifecycle, and evolution, of the platform it's launched on
- Unlike traditional industries (e.g., Klepper, 1996), complementor entry is easy and marginal costs are low to non-existing
- Complementor competition is further affected by:
 1. Stock vs. flow effects (e.g., Kickstarter vs Steam)
 2. Category crowding (e.g., games vs dance on Kickstarter)
 3. Platform attrition (e.g., apps on iOS)

Evolution of platforms and industries

In a **traditional production industry**, the number of **new entrants first increases and later decreases**. Furthermore, owing to scale advantages and consolidation there is **significant attrition** resulting in an **overall decline in the number of firms** later in the industry lifecycle.



In a **digital platform**, such as *Valve's Steam* (shown below), the number of **new entrants increases** over time as facilitation by the platform and indirect network effects make it attractive to enter (late). Furthermore, since there is virtually **unlimited shelf space** and **zero marginal production costs**, there is **very little attrition** leading to an **exponential growth in the number of firms** later in the platform lifecycle.



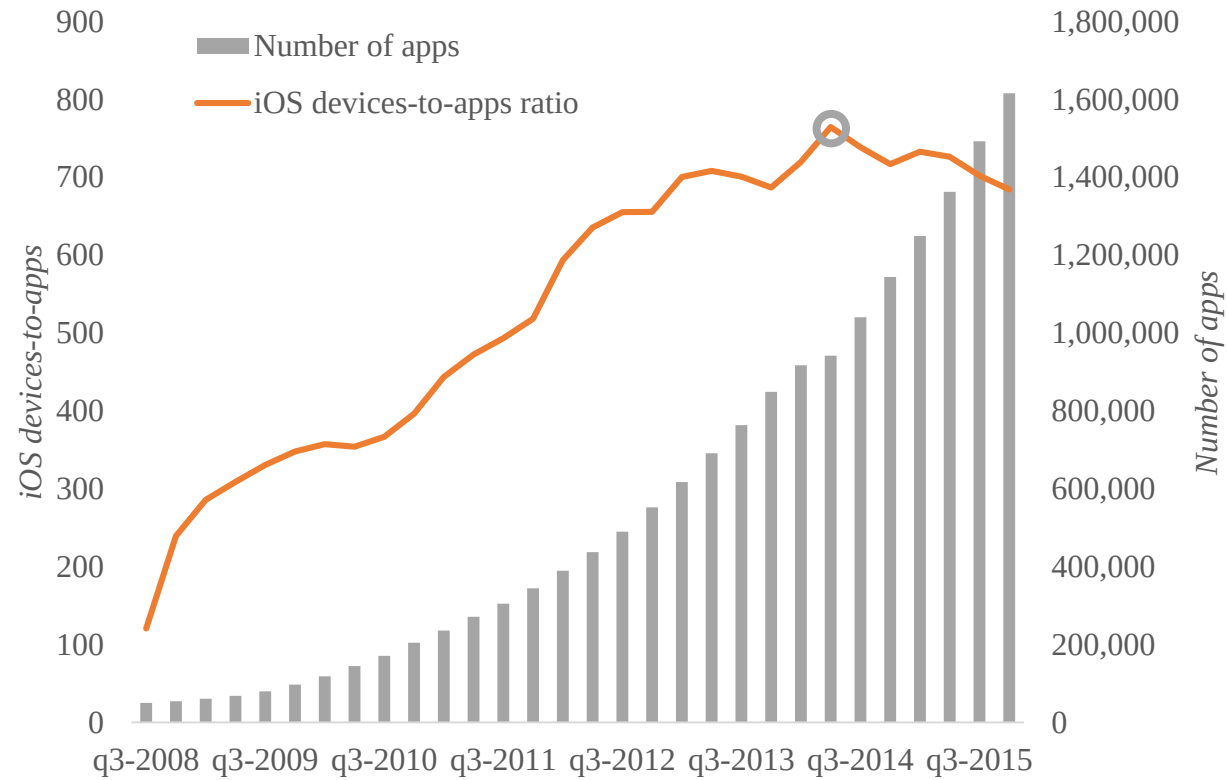
Combining demand and supply shifts

- As the platform gains popularity, complementors keep joining
- Complementors' average market potential is ultimately determined by the interplay between supply and demand on the platform:

$$\textit{App market potential}_t = \frac{\textit{Cumulative installed base}_t}{\textit{Cumulative app stock}_t}$$

- Complementors seem inert to changes on the demand-side (Clements & Ohashi, 2005), leaving relatively fewer consumers for every complement as the platform evolves (Rietveld & Eggers, 2017)

Case in point: Apple iOS apps



From 2014, the **number of apps** on Apple's iOS **started growing faster** than the **sales of iOS devices** resulting in relatively **fewer potential consumers for every app** released. (source: Rietveld, 2018)

- Worldwide iOS devices exceeded 1bn in 2015
 - Does not control for repeat device purchases
- Stock of apps in 2015: 1.6m
- Developers' *app market potential* grew from 100 to 750 between 2009 and 2014
- However, their *app market potential* been in decline since!

What are the implications for complementors?

How does this affect value creation, value distribution, and value capture?

Recap: Platform evolution

- Platform ecosystems are dynamic entities that evolve over time
- We identified three platform-specific evolutionary dynamics:
 1. Evolution of governance mechanisms
 - Platforms reduce their dependencies on complementors over time
 - Overall decrease in complementor support, favoring the few over the many
 2. Evolution of user-base composition
 - Over time, more and more end-users enter the platform
 - Late adopters, however, have lower WTP, are risk averse, and search less deeply
 3. Evolution of complementor competition
 - New entry increases over time, little attrition (no shake-outs)
 - Later, complementors often enter with greater ferocity than end-users

Platform evolution affects how complementors create and capture value

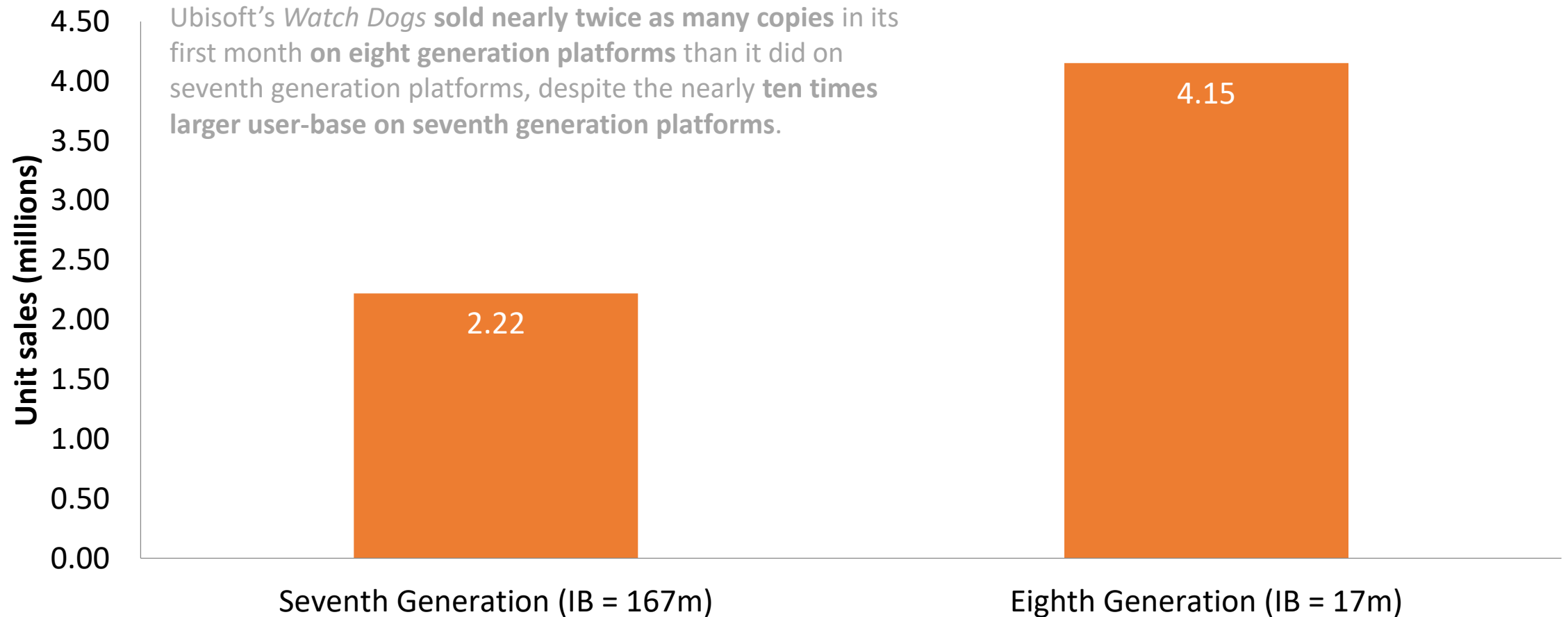
Evolutionary aspect	Value creation	Distribution of value	Value capture
Governance	Drop in overall governance support leads to a reduction in value creation for complementors	Directed governance towards reputable complementors with high quality products leads to a skewed value distribution for complementors	Drop in governance, threat of platform entry and absorption , lead to a reduction in value capture for complementors
Demand-side shifts	Lower WTP, risk aversion, and migration to next platform lead to a reduction in value creation for complementors	Risk and novelty aversion drive late adopters to a small group of hits, enhancing the skew in value distribution for complementors	Lower WTP and migration to next platform lead to a reduction in value capture for complementors
Complementor competition*	Increase in available complements leads to an average decrease in value creation for complements	Surviving early entrants benefit from economies of scope and learning which enhance the skew in value distribution for complementors	Drop in average prices due to increased competition lead to a reduction in value capture for complementors

* The extent of complementor competition on value creation, distribution and capture depends on 1) the ratio of end-users to complements –*app market potential*- and 2) whether there are stock (e.g., iOS App store) or flow (e.g., Kickstarter) effects to complementor participation.

Stylized facts about complementor value

1. On average, complementors create less value over time
 - The effect is amplified when entry occurs in the same category
 - The effect is amplified for very innovative complements
2. The distribution of value over complementors increasingly skews
 - In favor of hit complements by reputable complementors
 - In favor of incrementally innovative complements
3. The incentive to innovate for complementors goes down
4. It becomes harder for complementors to capture value
5. The above are amplified when complementors are subsidy-side

Watch Dogs revisited





WATCH DOGS

Watch Dogs was released towards the very end of the seventh generation gaming consoles (and at the beginning of eighth generation consoles) meaning that:

- These platforms had lowered their overall support for game publishers and focused support only on absolute hit games (e.g., GTA V)
- These platforms were heavily populated with late adopter consumers, and early adopters had already partly migrated to eighth generation platforms
- These platforms were rife with competition as the stock of games had grown substantially while many new games were still coming out at the same time
- Watch Dogs was a very innovative game (based on a new intellectual property). Demand for innovation was much higher on eighth generation platforms.

Implications for Complementors

- Look beyond the size of the platform user-base by taking into consideration compositional contingencies and migration
- Anticipate the shift from early to late adopters, apply divergent strategies across the platform lifecycle (Rietveld & Eggers, 2017):
 - **Early on:** Focus on *throwing gravel* by launching a wide variety of innovative complements in new categories. Apply a product proliferation strategy
 - **Later on:** Focus on *throwing rocks* by investing constraint resources in a limited set of familiar complements that extend earlier efforts
- Enter and innovate in relatively under-populated complementor categories in otherwise crowded platforms (Boudreau, 2012)

Implications for Platform Owners

- Deploy governance strategies that foster innovation on the complement-side (Gawer & Cusumano, 2014)
 - Subsidized production, exclusivity, selective promotion
- Implications when **end-users** are money-side:
 - Align governance strategies cyclically with changing demand-side (e.g., Apple)
 - Pursue a strategy that facilitates blockbuster complements
- Implications when **complementors** are money-side:
 - Deploy counter-cyclical governance strategies to halt these dynamics
 - E.g., regulate pricing, restrict entry, promote innovation (e.g., Nintendo)



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Thank you!



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