Reload & Relaunch
Strategic Governance of Platform Ecosystems

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Platform Governance

- Platforms owners can increase the *value created* by the platform ecosystem, and increase the amount of that *value that they capture* by regulating the participation, incentives, and coordination between third-party platform actors (Hagiu, 2014), e.g.,
  - Steering customers to particular products, e.g., Apple's recent paid search ads, related search suggestions
  - Controlling depth, range and quality of ecosystem, e.g., Nintendo's famous console entry and quality control policies
  - Promoting and incentivizing particular complements, e.g., Kiva's implementation of Social Performance Badges for MFI's

- Research suggests the importance of strategic governance (Boudreau & Hagiu, 2009; Eisenmann, Parker & Van Alstyne, 2009; Schilling, 2009), yet there has been limited empirical work (Wareham, Fox & Giner, 2014)

Value Creation and Capture in Platform Ecosystems

- A platform owner wishes to increase the value of the overall ecosystem it governs (*value creation*), and its ability to extract value from that ecosystem itself (*value capture*) (Brandenburger & Stuart, 1996)

- *Value creation* in platform markets:
  - Platform functionality (e.g. Schilling, 2003)
  - Size and composition of installed base (e.g. Ohashi, 2003)
  - Depth and breadth of complements (e.g. Nair, Chintagunta & Dubé, 2004)
  - Functionality of complements and fit with platform (e.g. Binken & Stremersch, 2009)

- *Value capture* in platforms markets:
  - Bargaining power of complementors (e.g. Johns, 2006)
  - Marginal value of joining platform to complements (e.g. Venkatraman & Lee, 2004)

Complement Value is Not Independent of the Platform

- Platforms can affect complements' value in myriad ways:
  - *Positively*: features/endorsements, category exclusivity, sponsoring, …
  - *Negatively*: competing with complements, platform exclusivity, design, …
- Platforms' value enhancing efforts are likely to be non-linear:
  - Poorly designed complements cannot be turned into 'stars'
  - But diminishing returns are also likely to set in (Adner & Zemsky, 2006)
- Extremely popular complements boost the overall value created by the platform, yet these complementors are in a better position to extract more value for themselves by negotiating better terms and resisting exclusivity → reduces platform's value capture

Platform
-Quality
-Installed Base

Breadth

Category 1 — — Category 2 — — Category 3

Depth

Complement 1
-Quality

Complement 2
-Quality

Complement 3
-Quality

Total Value Created in System

Value Captured by Platform

Value Captured by Complements

Consumer Surplus
(Value Not Captured by Platform or Complements)
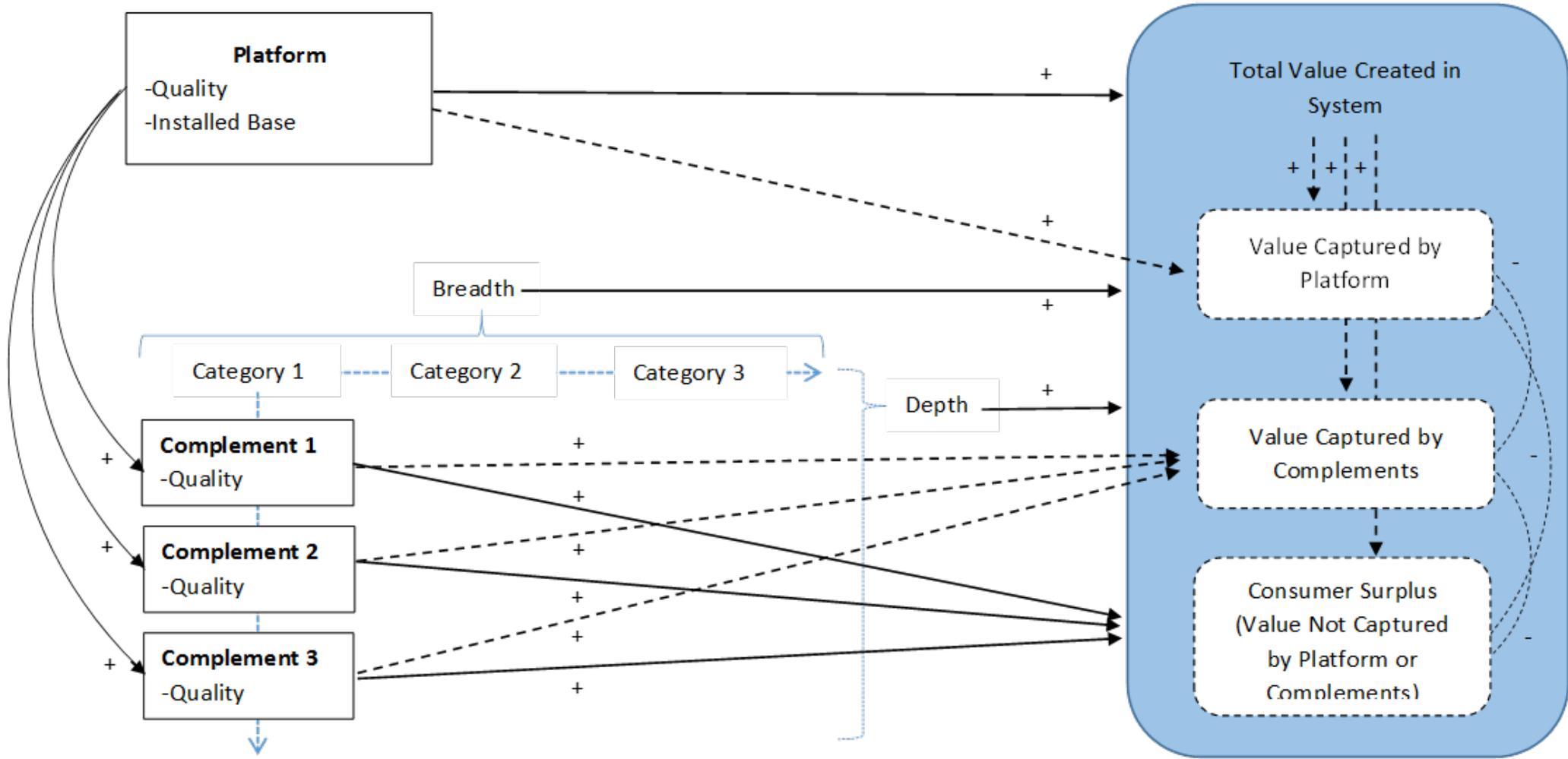
Value creation relationships   Value capture relationships

Research Questions

How do platform owners choose the complements in which to invest? Which complements benefit most by the platform's investment? Do temporal dynamics influence these payoffs?

Selective Promotion of Complements

- In many platform ecosystems, one of the primary ways the platform owner promotes individual complements is through endorsements:
  - App features by Apple and Google (e.g. *Editors' Pick*)
  - Social performance badges for MFI's by Kiva (e.g. *Fighting Poverty*)
  - Official playlists by Spotify (e.g. *Discover Weekly*)
  - Endorsed video game re-releases by Sony and Microsoft (e.g. *Platinum*)
- Platform endorsements create value through enhanced discoverability in crowded markets and signaling of value
- Endorsements are cheap but too many endorsements runs the risk of dilution and may have reputational consequences for platform owner

"Ed Sheeran 'owes career to Spotify'" - http://www.bbc.com/news/entertainment-arts-30436855 (Accessed: July, 2016)

Strategic Selection of Complements

- Endorsement must be a legitimate and useful signal of quality →
  - ***Hypothesis 1:*** *Platform owners will be more likely to endorse complements that experts have assessed as being of exceptional quality.*

- However, arguments about both unlocking latent star potential and bargaining power suggest endorsements will target the not-yet-stars →
  - ***Hypothesis 2:*** *Platform owners will be more likely to endorse complements that have demonstrated superior initial sales performance but are not yet market leaders.*

- Platform owner is also managing overall value of ecosystem through depth and breadth of complements pool →
  - ***Hypothesis 3:*** *Platform owners will be more likely to endorse complements in high-value categories in which the platform owner does not already have a top-selling complement.*

Strategic Selection of Complements

- To identify complements with "star potential" need sales and review data, yet platform also wishes to endorse early in cycle if possible because captures more revenue this way →
  - ***Hypothesis 4:*** *Platform owners will be more likely to endorse complements that were launched early in the platform lifecycle.*

- Endorsing multi-homing complements helps to create value for competing platforms and bolsters a complements that has bargaining power to capture value →
  - ***Hypothesis 5:*** *Platform owners will be more likely to endorse complements that are exclusive to their platform.*

'IF YOU LIKE...' ARE BENEFICIAL FEATURED CATEGORIES

Average Download Increase per Category, Apple App Store, U.S.

Category	Start Date of the Feature	End Date of the Feature	Average Download Growth	Example App
If You Like... Candy Crush	14 / 02 / 2014	20 / 02 / 2014	279%	Puzzle Craft
If You Like... Minecraft	21 / 02 / 2014	27 / 02 / 2014	175%	Tiny Tower
If You Like... The Room	28 / 02 / 2014	06 / 03 / 2014	255%	The Silent Age
If You Like... Badland	07 / 03 / 2014	13 / 03 / 2014	395%	Sea Stars

"Apps featured by Apple or Google get 6 times the downloads and 9 times the revenue – or nothing." www.venturebeat.com (Accessed: April, 2015)

Endorsement Outcomes

- Endorsement sends signal of quality – this is particularly valuable for the mass market of 'light' consumers →
  - ***Hypothesis 6:*** *An endorsement by the platform owner will positively influence the sales performance of a complement.*
- There is more value to be unlocked in a complement that has great reviews but isn't yet a top seller →
  - ***Hypothesis 7:*** *Complements that have exceptional quality but not superior sales performance will experience greater sales increases subsequent to endorsement than those with superior performance or low quality.*

Endorsement Outcomes

- There are competing arguments for the timing of an endorsement
- Complements typically generate most attention at, or shortly after, launch, and complement sales tend to be highest in first weeks after launch → early endorsement might be able to amplify
  - *Hypothesis 8a: Complements that receive an endorsement earlier in their lifecycle will reap greater sales increases.*
- Later endorsement might be better able to tap customer segments that adopt the platform later; and later adopters are more reliant upon endorsements as quality signals →
  - *Hypothesis 8b: Complements that receive endorsements later in their lifecycle will reap greater sales increases.*

Data: Platform Endorsed Re-Releases

Endorsed Re-Releases in Console Video Games
- Console video games as canonical example of MSP
- Sony PlayStation 3 and Microsoft Xbox 360
- Focus on EU mkt, endorsements more common
- Re-launch fraction (≈10%) of most popular titles
  - Sony = "*Platinum: The Best of PlayStation 3*"
  - Microsoft = "*Classics: Best Seller Awarded*"
- Selection by platform owner contingent on meeting EU sales-threshold and time on market
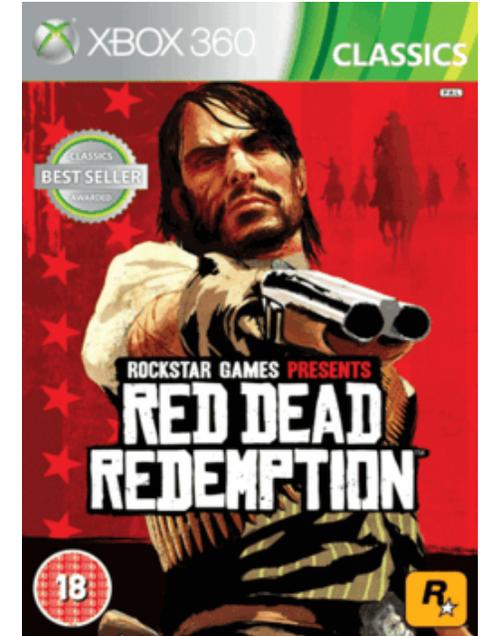
- Longitudinal data (game-platform-week) of 475 PS3 and 536 Xbox360 games in the UK (2007-2011)
- 65 PlayStation Platinum (14%) and 68 Xbox Classics (13%) games
- UK sales data include 90% of all retail transactions (both brick-and-mortar and online)
- Additional data from Metacritic (for quality) and VGChartz (for EU sales data)

Sales: *Uncharted: Drake's Fortune* (PS3)
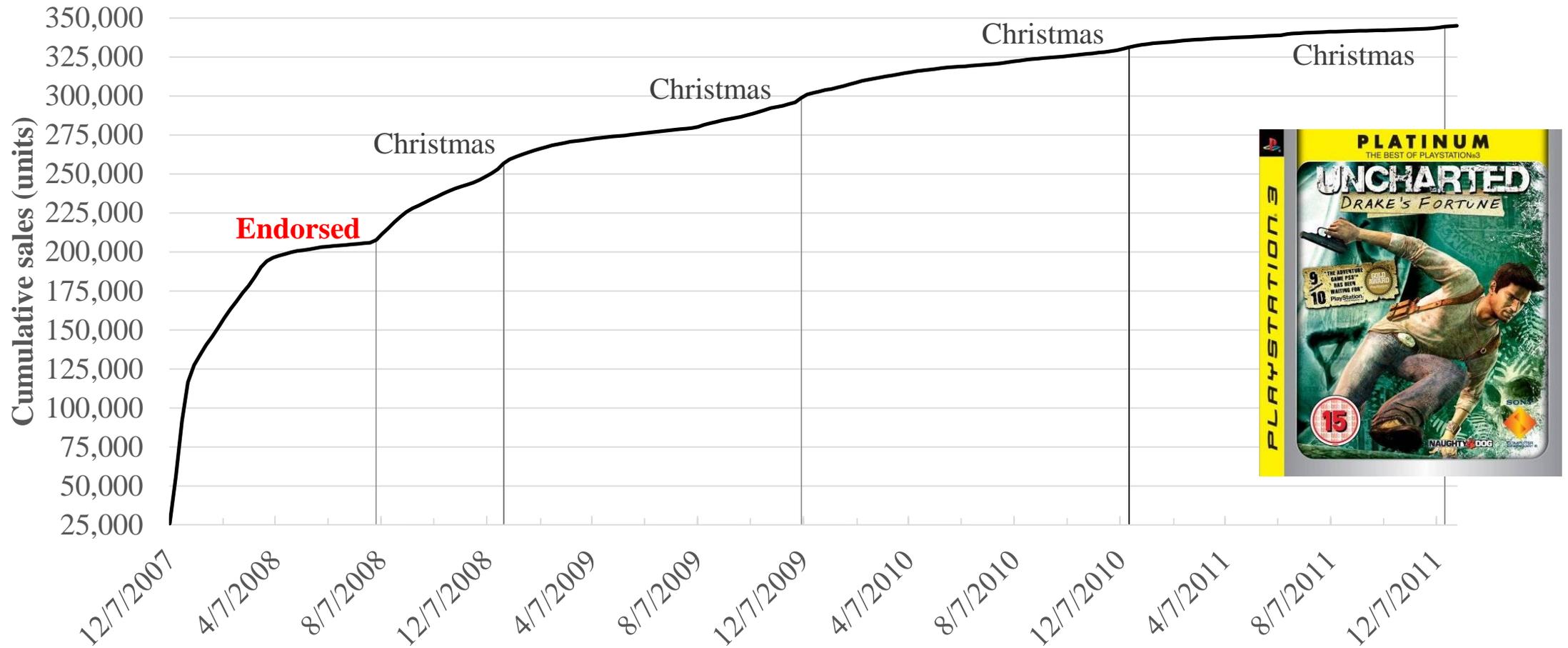
Results for H1-5

- Logistic regression of all 1,011 games estimating probability of receiving platform endorsement
- Control for EU sales, platform, month, and genre
  - *High quality* (i.e. review scores) games are 16 times more likely to receive endorsement (H1)
  - *Top 20% sales rank* games are more likely to receive endorsement but not top 1% (i.e. market leading) (H2)
  - A platform is much more likely to endorse games in high value genres in which the platform does not already have a hit game (*no prior hit in genre * value of genre*) (H3)
  - Every three month increment in *platform age* reduces the probability for endorsement by 9% (H4)
  - Platform exclusive games are no more likely to be endorsed than multi-homing games (H5)
- Endogeneizing *platform exclusive* (Landsman & Stremersch, 2011) does not change results

	Endorsed	
	Logistic	Treatment
High quality	16.03* [19.36]	0.06** [0.02]
Medium quality	5.20 [6.23]	-0.01 [0.02]
Top 1% sales rank	1.11 [1.53]	0.21 [0.14]
Top 2%-5% sales rank	7.52** [5.36]	0.42** [0.09]
Top 6%-20% sales rank	4.49** [2.06]	0.20** [0.06]
No prior hit in genre	0.06** [0.05]	-0.12** [0.04]
Value of genre	1.03 [0.83]	-0.04 [0.06]
No prior hit in genre * value of genre	685.40** [1149.37]	0.32** [0.08]
Platform age (quarters)	0.91* [0.04]	-0.01* [0.003]
Platform exclusive	1.26 [0.65]	0.01 [0.07]
ln(Euro. unit sales)	27.27** [32.83]	0.33* [0.02]
Xbox 360	2.10** [0.59]	0.04† [0.02]
Month dummies	YES	YES
Genre dummies	YES	YES
Constant	0.003** [0.003]	0.002 [0.07]
Observations	1011	1011
Pseudo R-squared	0.46	

† p < 0.10; * p < 0.05; ** p < 0.01. Publisher-clustered robust standard errors in parentheses (45 clusters).

Results for H6

- Difference-in-difference panel regression of 25 game-pairs where endorsement was conferred on one platform (e.g. PS3) only

- Models include game-pair, game age, and weeks since endorsement fixed effects

- Control for positive cross-side and negative same-side network effects (and price)
  - Endorsed games have 105% higher sales in the post-endorsement period (Model 2, *post-endorsement * endorsed*) (H6)

	Ln(Unit sales)			
	1	2	3	4
Post-endorsement	0.47 [0.34]	-2.01 [0.34]	0.03 [0.38]	-0.54 [0.37]
Endorsed	0.24 [0.18]	0.21 [0.19]	0.02 [0.19]	-0.02 [0.18]
*Post-endorsement * Endorsed*		0.72** [0.22]		0.61** [0.22]
Competition	-0.03** [0.004]	-0.03** [0.004]	-0.03** [0.004]	-0.03** [0.004]
ln(Platform sales)	0.37** [0.05]	0.37** [0.05]	0.43** [0.07]	0.43** [0.07]
Average Selling Price			-0.03* [0.01]	-0.03* [0.01]
Xbox 360	0.58* [0.25]	0.58* [0.25]	0.51** [0.18]	0.51** [0.17]
Game-pair fixed effects	YES	YES	YES	YES
Game age fixed effects	YES	YES	YES	YES
Weeks since end. fixed effects	YES	YES	YES	YES
Constant	4.22** [0.75]	4.22** [0.76]	5.40** [1.06]	5.36** [1.09]
Game-week observations	8520	8520	5944	5944
Games	50	50	50	50
Overall R-squared	0.76	0.76	0.71	0.72

† p < 0.10; * p < 0.05; ** p < 0.01. Publisher-clustered robust standard errors in parentheses (10 clusters).

Results for H7-8

- OLS regression of *sales increase* (relative measure) for all 133 endorsed video games

- Controls for length of endorsement period, platform, month, and genre fixed effects
  - Games with exceptional quality but not market-leading sales (*high quality* bottom 21-100 sales rank*) experience 12% higher sales increases subsequent to endorsement (H7)
  - Launching endorsed re-releases 272 days later than average (*ln(Age at endorsement*), reduces sales increase by two per cent (H8a)

- Controlling for non-random selection of endorsed re-releases (Heckman) does not change results

	Sales increase	
	OLS	**Treatment**
High quality	-0.08	-0.01
	[0.05]	[0.08]
Medium quality	-0.17**	-0.13*
	[0.05]	[0.05]
Bottom 21-100% sales rank	-0.04	-0.10
	[0.05]	[0.08]
*High quality * Bottom 21-100% sales rank*	0.12*	0.12*
	[0.05]	[0.05]
*Medium quality * Bottom 21-100% sales rank*	0.11	0.09
	[0.08]	[0.07]
ln(Age at endorsement)	-0.12**	-0.12**
	[0.04]	[0.04]
Length of endorsement period (quarters)	0.02**	0.02**
	[0.004]	[0.003]
Xbox 360	-0.01	-0.004
	[0.02]	[0.03]
Calendar month dummies	YES	YES
Genre dummies	YES	YES
Constant	0.77**	0.58*
	[0.22]	[0.25]
Games	133	133
R-squared	0.53	0.53
Inverse Mills Ratio (λ)[a]		0.06
		[0.06]

† p < 0.10; * p < 0.05; ** p < 0.01. Publisher-clustered robust standard errors in parentheses (18 clusters).

Overview of Findings

	Selection of Complements for endorsement	
H1	Platforms endorse complements of exceptional quality	SUPPORTED*
H2	Platforms endorse complements of superior but not market-leading sales	SUPPORTED**
H3	Platforms endorse complements in high value categories without market-leading complements	SUPPORTED**
H4	Platforms endorse complements that launch early in the platform lifecycle	SUPPORTED*
H5	Platforms endorse platform-exclusive complements	NOT SUPPORTED
	Outcomes of Platform Endorsement	
H6	Platform endorsements boost complement sales	SUPPORTED**
H7	Complements of exceptional quality but not market-leading sales gain greater sales increases from platform endorsements	SUPPORTED*
H8a	Complements that receive an endorsement earlier in their lifecycle reap greater sales increases from platform endorsements	SUPPORTED**

Discussion and Conclusions

- Endorsements are a valuable lens to examine value creation and value capture in platform markets
  - Unlock and capture value by endorsing complements of high quality with superior but not market leading sales performance
  - Platforms manage depth and breadth of platform by endorsing complements in high value categories without any recent 'stars'
  - Platform endorsements create value, with the highest marginal value created early in the lifecycles for high quality but not market leading complements
- Later in platform lifecycle complements have weaker bargaining position and encounter stronger competitive crowding effects, implies that it's not just the size of the installed base that matters

Discussion and Conclusions

- Contribute to work on strategic governance of multisided platforms (Boudreau & Hagiu, 2009; Eisenmann *et al.*, 2009; Hagiu, 2014; Schilling, 2009; Wareham *et al.*, 2014)

- Value creation and value capture are more complex in platform markets
  - Take into account complementors' bargaining position
  - Aim to support complements with highest marginal value
  - Platform owners have limited resources to add value to complements
  - Platform owners need to be wary of competition between complements

- While platform owners might want best-in-class complements for their system, investment in the "up and coming" complements might enable it to unlock and capture the most value

Thank you! Questions?

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