

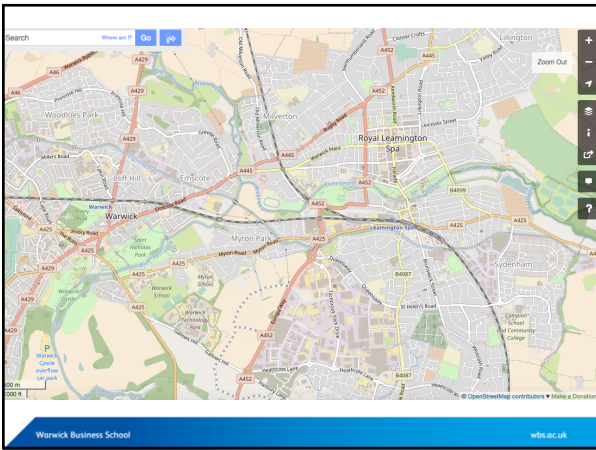
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WARWICK BUSINESS SCHOOL
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For the Change Makers

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Platform Generativity and the Impact of Endorsements

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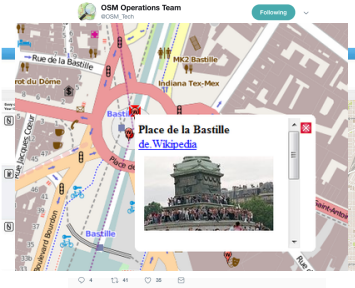
OpenStreetMap

- Free, editable map platform
- The "Wikipedia of Maps"
- 2018:
 - > 4,500,000 users
 - > 1,000,000 contributors
- OpenStreetMap:
 - powers Craigslist map and area search
 - provides interface to Foursquare app and web (e.g. explore function)
 - used in navigation software (e.g., Scout Routing)

OpenStreetMap
wbs.ac.uk

Generative Use by Service Providers

- OpenStreetMap:
 - powers Craigslist map and area search
 - provides interface to Foursquare app and web (e.g. 'explore' function)
 - Combines functions with other services (e.g. Wikipedia)
 - Integrated into devices and operating systems (e.g. Apple, Garmin, TomTom, etc.)



Platform Boundary Resources

- Capabilities such as APIs or meta-data that serve as the interface between a platform's core and peripheral resources (Ghazawneh and Henfridsson 2013; Eaton et al. 2015)
- Important means of:
 - Transferring design capability to platform stakeholders (cf. Von Hippel and Katz 2002)
 - Growing the platform (Parker et al. 2016)
- Examples:
 - Google Maps API
 - iOS APIs
 - OpenStreetMap meta-data

Platform Generativity

- Platform generativity
 - the generation of new outputs without direct input by the platform operator
- Highly desirable for platform operators:
 - Cannot possibly develop all functionality
 - Arm's length relationship to platform complements
- However, not all generativity is equally desirable
- Information asymmetry (Ho and Rai 2017)

Endorsements

- Endorsements: actions that signal desirable interaction on the platform
- Examples include:
 - Give special status to preferred developers (Ho and Rai 2017)
 - Sanction new use cases (Förderer et al. 2018)
 - Formulate code of conducts (Karhu et al. 2018)
 - Announce future plans (Parker et al. 2017)

Research Question

- How and why do endorsements influence generativity?
- Two elements:
 - identify different strategic motives for endorsements
 - test the impact of the identified endorsement motives on platform generativity

Mixed Methods

- Multi-method study of the geo-data platform OpenStreetMap.
 - In-depth content analysis of its discussion forum to inductively identify strategic motives for endorsements.
 - Formulate hypotheses to test the impact of these endorsement motives on platform generativity using an original data set of tagged geodata from OpenStreetMap.

Four Strategic Motives

Motive for Endorsement	Description	Example from Content Analysis	References
Commit to New Market	Expanding the market footprint of a platform by establishing a categorically new way of interacting with platform resources.	Endorsing the building and shops tag categories as new additions to the data model	Boudreau 2010 Eisenmann et al. 2011 Evans et al. 2009
Accommodate Third-Party	Accommodating interests of platform participants	Endorsing highways tags in the database that provide finely grained details to external navigation applications	Eaton et al. 2015 West 2003
Balance Market Demand	Directing the platform such that the installed base is maximized	Endorsements that prioritise general and widely applicable tags over niche or localized alternatives	Parker et al. 2017 Boudreau 2012
Ratify Emergent Use	Reacting to unanticipated use cases	Endorsing tags that were unanticipated such as detailed distinctions for rental objects (boats, cars, bikes, etc.)	Förderer et al. 2018 Wörchham et al. 2014

Study #2

- Source: full excerpt of tagged geo-data in Europe
- Focus: number of objects and level of detail per tag
- Aim: Do endorsements benefit platforms in scale *and* scope?

scale: more data objects with an endorsed tag?

Scale	Scope
<pre><way id="227570282" timestamp="2013-06-26T20:32:56Z" version="1" /> <tag k="highway" v="secondary"/> <tag k="lit" v="yes"/> <tag k="name" v="Abbey Road"/> <tag k="ref" v="B507"/> <tag k="sidewalk" v="right"/> </way></pre>	<pre><way id="227570282" timestamp="2013-06-26T20:37:14Z" version="2" /> <tag k="highway" v="secondary"/> <tag k="lit" v="yes"/> <tag k="name" v="Abbey Road"/> <tag k="postal_code" v="NW8"/> <tag k="ref" v="B507"/> <tag k="sidewalk" v="right"/> </way></pre>
<pre><way id="227570282" timestamp="2013-12-08T23:00:32Z" version="3" /> <tag k="highway" v="secondary"/> <tag k="lit" v="yes"/> <tag k="maxspeed" v="20 mph"/> <tag k="name" v="Abbey Road"/> <tag k="postal_code" v="NW8"/> <tag k="ref" v="B507"/> <tag k="sidewalk" v="right"/> </way></pre>	<p>scope: more details on objects with an endorsed tag?</p>

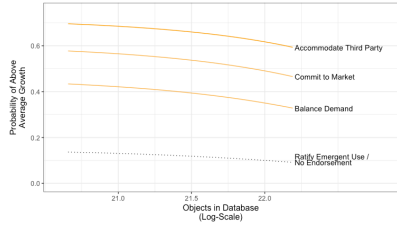
Results (1)

$Y(\text{logit})$ Tag Usage Growth > Platform Average = $\beta 1$ motive for endorsement + controls

	Dependent variable: Tag Usage Growth > Platform Average Binary	
Pattern: Market Making (New Category)	2.380***	(0.617)
Pattern: Third Party Request	2.513**	(0.862)
Pattern: Balance Demand	1.408*	(0.626)
Pattern: React to Emergent Use	0.471	(0.882)
Objects in Database	-1.312e-9*	(7.087e-10)
Tag Tenure	-0.084***	(0.012)
Tags Documented (% in Group)	-11.32	(18.44)
Contrast (Other Endorsed Tags)	included	
Tag Fixed Effects	included	
Time Fixed Effects	included	
Intercept	0.053	(0.948)
Observations	379	
McFadden Pseudo R-Squared (%)	26.5	
CoxSnell Pseudo R-Squared (% at .50 cutoff)	0.77	
AIC/AICc controls only model	409.4 / 451.6	
Note:	*p<0.05, **p<0.01, ***p<0.001 Robust standard errors in parentheses; coefficients in log-form Pseudo R Squared Measures are based on 10 cross-validations Using samples of 100 objects with 'unendorsed' tags for baseline reference	

Results (2):

- 3 of 4 endorsement motives result in increased scale (they grow faster than the platform does on average)



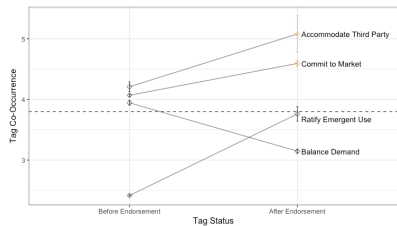
Results (3):

Y_i Tag Co-Occurrence = $\alpha_i + \beta_i$ motive for endorsement \times time of endorsement + controls

Model Results - Platform Scope (Quasi-Poisson Regression)	
	Dependent variable: Tag Co-Occurrence
	Excrete Non-Negative
Pattern: Market Making (after endorsement)	0.197*** (0.014)
Pattern: Market Making (before endorsement)	0.086*** (0.015)
Pattern: Third Party Request (after endorsement)	0.281*** (0.025)
Pattern: Third Party Request (before endorsement)	0.086*** (0.016)
Pattern: Balance Demand (after endorsement)	-0.159*** (0.011)
Pattern: Balance Demand (before endorsement)	0.052*** (0.011)
Pattern: React to Emergent Use (after endorsement)	-0.013 (0.019)
Pattern: React to Emergent Use (before endorsement)	-0.460*** (0.013)
Objects in Database	7.396e-11*** (1.115e-11)
Tag Tenure	-0.008*** (0.002)
Tags Documented (% in Group) ¹	included
Control: Other Endorsed Tags	included
Tag Fixed Effects	included
Time Fixed Effects	included
Intercept	0.574*** (0.048)
Observations	37,890
McFadden Pseudo R-Squared (%)	10.2
quasi AIC / AIC controls only	91,175 / 98,123
Note:	
*p<0.05; **p<0.01; ***p<0.001	
Robust standard errors in parentheses; coefficients in log form	
¹ variable included as quartile split to avoid multicollinearity	

Results (4):

- 2 of 4 endorsement motives result in increased scope
- These are more detailed than the platform is on average



Results (5):

- 2 of 4 endorsement motives lead to platform generativity

Endorsement Motive	Aspects of Generative Change	
	Increases Platform Scale	Increases Platform Scope
Commit to New Market	confirmed (H1a)	confirmed (H1b)
Accommodate Third Party	confirmed (H2a)	confirmed (H2b)
Balance Market Demand	confirmed (H3a)	not confirmed (H3b)
Ratify Emergent Use	not confirmed (H4a)	not confirmed (H4b)

Conclusions

- Contributions:
 - Identifying four strategic motives for endorsing boundary resources for generativity
 - Explaining how and why these motives influence platform generativity
- Creating new markets and third-party accommodation are straightforward endorsements for generativity
- Balancing market demand and ratifying emergent use less clear-cut cases

Many thanks for your attention!
