

Agenda

- What is a Platform business?
- What are network effects, and why are they important?
- What is the structure of platforms, and what are its implications for managing platforms?
- What are envelopment attacks?

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Platform Business

- Platform business is a business model (not a technology infrastructure) that focuses on helping to facilitate interactions across a large number of participants
- The role of the platform business is to provide a governance structure and a set of standards and protocols that facilitate interactions at scale so that network effects can be unleashed

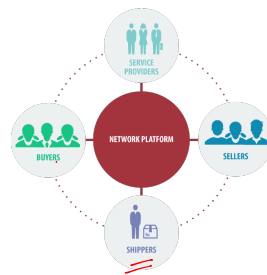
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Platform

- A platform encompasses the common components and rules employed by network users in most of their interactions
- Products and services that bring together groups of users in two- or three- sided networks are platforms

One
two
three



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Platform Function

- **Connectivity:** Point-to-point transfer of information, goods, passengers
- **Variety:** they elicit offers from supply-side users that vary along the dimensions valued by the demand-side
- **Matching:** facilitate members of two distinct groups with heterogenous needs to discover suitable transaction partners
- **Price-setting:** help users to disclose the price at which they are willing to exchange well-defined items

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Aggregation Platforms

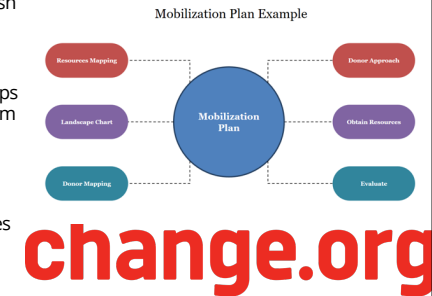
- Bring together a broad array of relevant resources and help users to connect with the most appropriate resources.
- These platforms tend to be very transaction- or task-focused:
 - Express a need, get a response, do the deal, and move on
 - Marketplace and broker platforms like eBay and Etsy are well-known examples.
- Aggregation platforms operate on a hub-and-spoke model, whereby the platform owner and organiser broker the transactions.



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Mobilisation Platforms

- Move people to work together to accomplish something beyond the capabilities of any individual participant.
- They tend to foster longer-term relationships rather than focus on isolated and short-term transactions or tasks.
- In a business context, the most common form of these platforms brings together participants in extended business processes like supply networks or distribution operations.



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Learning Platforms

- Facilitate learning by bringing participants together to share insights over time.
- They tend to foster deep, trust-based relationships, as participants have the opportunity to realise more potential by working together.
- Business leaders who understand this will likely increasingly seek out platforms that not only make work lighter for their participants, but also grow their knowledge, accelerate performance improvement, and hone their capabilities in the process.



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Network Effects

Winner Takes All Market

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Networks

- A network is a system of interconnected nodes
- The nodes can be people, companies, places or things
- In platform mediated networks, the nodes are called network users.



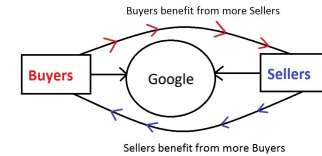
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One-, two-, and three-sided networks

- Networks can be categorized according to the number of distinct user groups they encompass.

- **One-sided:** If users are homogenous, i.e., all perform similar functions
 - Stock trader, phone user
- **Two-sided:** Have two distinct user groups who consistently play the same role
 - Credit-card (cardholder & merchants)
- **Three-sided:** Have three distinct groups of users
 - You-tube: Content consumer, content provider, advertisers

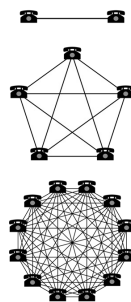


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Network effects

- Network effects can be positive or negative
- **Positive** - a larger user base is appealing
 - Network growth increases WTP – Fax *what's app.*
 - Subsidizing one side to increase growth and profit from the other side
- **Negative** – a larger user base is distracting
 - Network growth decreases WTP – you-tube advertisers
 - Milk the negative side to the extent possible

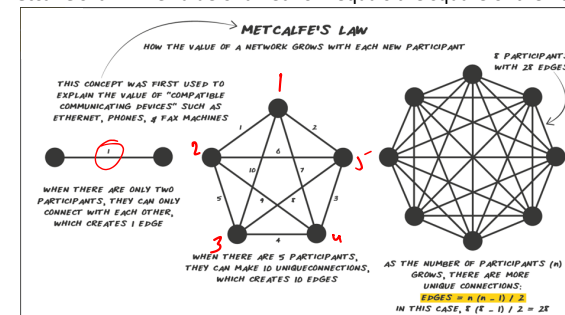


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Strength of network effects



- **Metcalfe's law:** The value of a network equals the square of the number of users



$$\frac{n(n-1)}{2}$$

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Strength of network effects

- The penguin problem
 - Prospective users on each side will not invest in the platform until they are confident there will be enough users on the other side



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Network Effect

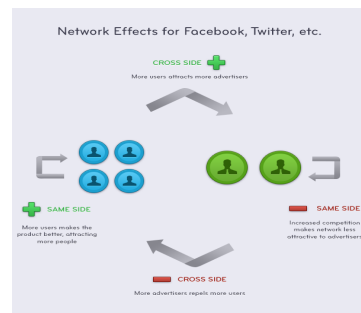
- Network effects are evident when a network's value to any given user depends upon the number of other users in the network.
 - **Cross-side network effects:** Members of each group exhibit a preference for the nos of users in the other group (*indirect network effect*)
 - **Same-side network effects:** members have preference regarding nos of users in own group (*direct network effect*)



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Pricing the Platform

- Typically, two-sided networks have a **'subsidy side'** i.e. a group of users who when attracted in volume are highly valued by the **'money side'**



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Pricing the Platform

- A platform provider subsidises some network users, catalysing positive feedback fuelled by network effects.
 - After other users join, the platform provider charges them fees that recover the subsidies.
- Subsidies can take several forms.
 - Penetration pricing
 - Exclusivity
 - Permanent Subsidies
 - In-house compliments

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Winner Take All Market

Handwritten notes: *facebook ID. — facebook.*
Insta *to Tweed*

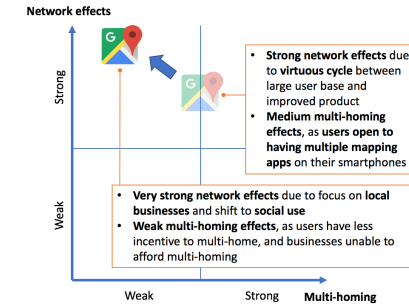
- **Strong network effects:** Users want access to all potential transaction partners. A sub-scale platform is of little use unless it provides the only way to reach some partners.
- **Multi-homing costs:** "Homing" costs include all the expenses incurred by network users due to platform affiliation. When users multi-home – i.e., when they use multiple platforms – their costs increase.
- **Inimitable features are not valuable:** If demand for special features is low, then users will converge on one platform.

Handwritten notes: *— Gmail — facebook*
linkedin google — Insta

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Winner take all Dynamics

- A network platform is likely to be served by a single platform when:
 - Multi homing costs are high for at least one user side
 - Network effects are positive and strong – at least for the users on the side of the network with high multi homing costs
 - Neither side's users have a strong preference for special features



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Structure of Platforms

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Platforms

- Platforms includes common components and rules
 - Components include hardware, software and services along with the architecture
 - Rules includes standards, protocols, policies and contracts
- **Platform providers:** who does a user contact first when a transaction goes wrong
- **Platform sponsors:** unsponsored, single vs multiple sponsors
- **Component based network effects**

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Structure of Platform

- **Proprietary platform** has a single sponsor e.g. Apple Mac, Sony Playstation
- **Shared platform** has multiple firms collaborating in technology but competing in market to offer differentiated products e.g. Visa
- **Joint venture** has multiple firms developing the platform but a single firm serves as the provider
- **Licensor** has a single firm develop the technology and license the technology e.g. AMEX

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Examples Categorized using Structural Taxonomy of Platforms

FIGURE 1. Models for Organizing Platforms

		Who Serves as Platform Provider, Mediating Users' Interactions?	
		One Firm	Many Firms
Who Serves as Platform Sponsor, Controls Technology and Participation Rights?	One Firm	Proprietary • Macintosh • Playstation • Monster.com • Federal Express	Licensing • Palm operating system • American Express-branded MBNA cards • Scientific Atlanta set-tops
	Many Firms	Joint Venture • CareerBuilder (created by three newspaper groups) • Orbitz (created by several major airlines)	Shared • Linux • Visa • DVD • UPC barcodes

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When one firm has an edge...

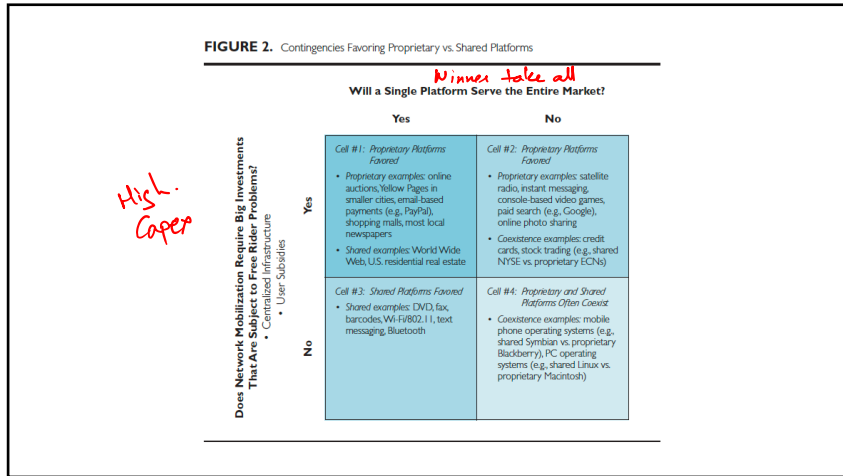
- When a firm that aspires to serve a new platform-mediated market has an unambiguous edge over potential rivals, it almost always should choose a proprietary model.
 - A proprietary provider can capture 100% of the platform's added value
- Firms can develop superior technology that is inimitable due to patents or trade secrets.
- Aspiring platform providers can derive a competitive advantage by virtue of their control over crucial resources or relationships

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When many firms are evenly matched...

- The attractiveness of a proprietary versus shared model will hinge on:
 - whether building a platform requires significant investments that are subject to free rider problems;
 - Centralized infrastructure
 - Network user subsidies
 - R&D spending
 - Soln: Contracts or Govt. as partner
 - Whether the market is likely to be served by a single platform over the long term
 - Network efforts are strong
 - Multi-homing costs are high
 - Demand for differentiated features is limited

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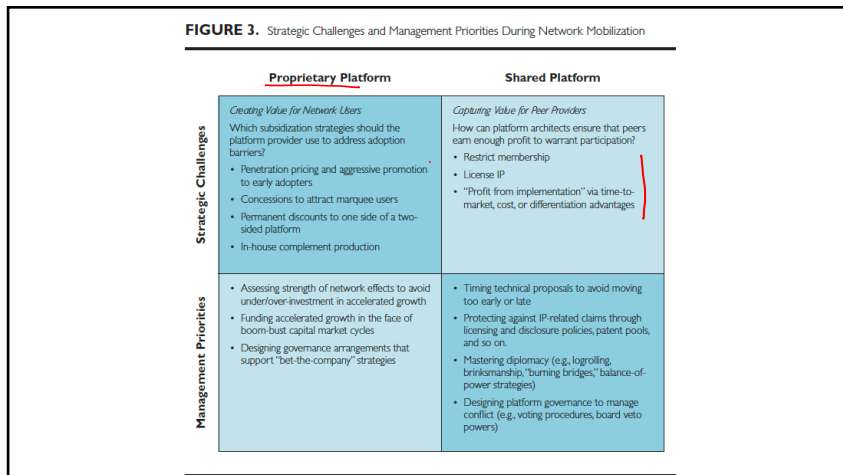


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Managing Shared Platforms

- **Restricting Membership:** Limit the size of the provider peer group and thereby reduce rivalry.
- **Profiting from IP:** Allow platform providers to earn license fees from intellectual property (IP) that they contribute to the shared platform.
- **Profiting from Implementation:** Cooperating on a common standard, then competing in the marketplace with products that implement that standard.

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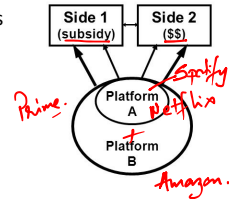
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Envelopment

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Threat of Envelopment

- Platforms frequently have overlapping user bases
- Leveraging these shared relationships can make it easy and attractive for one platform provider to swallow the network of another



- Platform providers in separate but adjacent networked markets (A and B) share users
- Provider B enters A's Market
- Provider B bundles products A and B, undercutting provider A's "money side"

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Platform Envelopment

- **Platform Envelopment:** Entry by one platform provider into another's market, combining its own functionality with the target's in a *multi-platform bundle* that leverages *common components* and/or *shared user relationships*
- Envelopment is a powerful force shaping the evolution of platform-mediated networks
 - Path to platform leadership change that *does not require Schumpeterian creative destruction*
 - Driver of industry *convergence*
 - Strategy for *cross-layer competition*

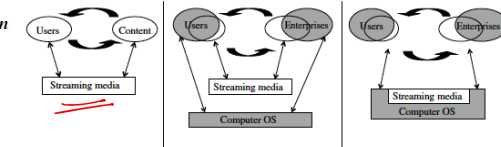
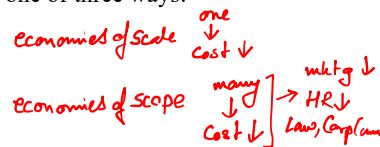


Figure 1. Microsoft's envelopment of RealNetworks

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Typology of Envelopment Attacks

- An envelopment attack most often succeeds when:
 - The target's and attacker's users overlap significantly
 - the attacker can harness price discrimination benefits *subsidies*.
 - economies of scope are high
- Any two platforms must be related in one of three ways:
 - ✓ Complements
 - ✓ Substitutes
 - Functionally unrelated



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Typology of Envelopment Attacks

- **Foreclosure attack:** The target provides a compliment to the attacker's core platform.
 - By bundling the target's platform with its own, the attacker *forecloses* access to its core platform's users, reducing the target's revenue
 - The enveloper can extend its market power into the target's market and increase barriers to entry in its core market
 - As the target's platform declines in value due to network effects, standalone rivals in the envelopers' core market must rely on an inferior compliment
 - The enveloper will have efficiency gains

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Recap

- Platforms, Networks, Two-sided markets
- Types of network effects
- Pricing of networks
- Winner takes all dynamics
- Structural taxonomy of platforms
- Managing platforms
- Threat of envelopment