ITU Workshop on
"Service Delivery Platforms (SDP) for Telecommunication Ecosystems: from today's realities to requirements and challenges of the future"

(Geneva, Switzerland, 17 October 2011)

ICT Platforms: Types and Implications

Prof Dr Pieter Ballon
Research Leader
IBBT-SMIT, Free University Brussels

International Telecommunication Union

IBBT

- Independent research institution
- Founded by the Flemish government in 2004
- Stimulate ICT innovation
- Networked RDI
    - Demand-driven research
    - 5 Flemish universities
    - Interdisciplinary teams
- Active support
    - Testbeds & Living Labs
    - Incubation & venturing

ibbt
connect.innovate.create

721 research partners

257 research projects

30 mio €/y budget

30 incubation projects

1000+ researchers in 5 departments

10 seed investments

13 IBBT spin-off companies

1000+ publications

Outline

- The Concept of Platforms

- Types of Platform Models

- Implications of Platform Models

The Concept of Platforms

Platform for Broader Market Opportunity

Sedan | Cabriolet | Van | Crossover/SUV

Common Powertrain

Revolutionary Packaging

Adaptable Common Platform

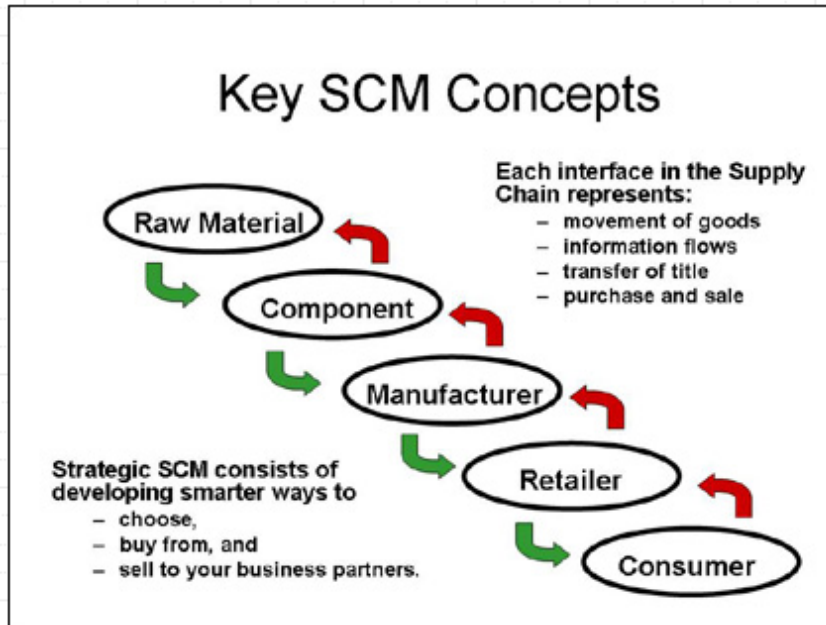*Tesla car platform presentation slide, 500, 04.10.2011*

Technical Platform

- Modular architecture
- Common HW/SW base
- Complementary components

Business Platform

- Value Network
- Mediating entity
- 3rd Party products and services

Geneva, Switzerland, 17 October 2011

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From Supply Chain Management

Key SCM Concepts

Raw Material → Component → Manufacturer → Retailer → Consumer

Each interface in the Supply Chain represents:
- movement of goods
- information flows
- transfer of title
- purchase and sale

Strategic SCM consists of developing smarter ways to
- choose,
- buy from, and
- sell to your business partners.

Caplice, 2003

- **Supply Chain Management**
  - Management of materials, information and financial flows
  - Linear dependencies
  - Inventory-Information trade-off

- **Strategies**
  - Careful selection of suppliers
  - Lean and mean processes
  - Low margins
  - Meticulous SLA's

To Business Ecosystem Management
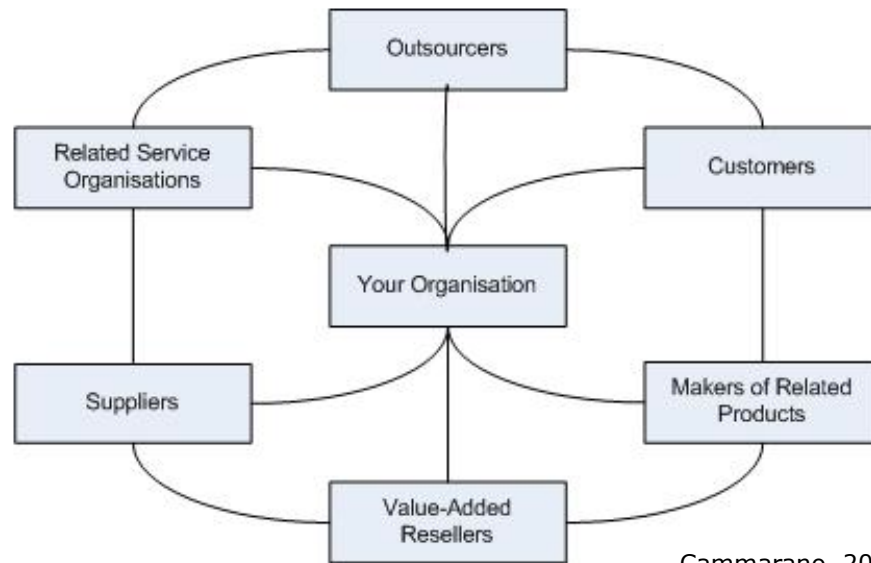
Cammarano, 2008

■ **Ecosystem Management**

➜ Management of business partners and models

➜ Complex dependencies

➜ Openness-lockin trade-off

■ **Strategies**

➜ Minimal selection of complementors

➜ Access and quantity

➜ Healthy margins

➜ Revenue sharing

Why? Because it's a two-sided market

Ditch Fridays at the Palms: On Friday, Playboy Playmates of 2008 will host the grand opening starting at noon. In addition to cabanas and daybeds, a variety of special events are planned through the season, including live concerts and visits from famous DJs. The party starts every Friday from noon to 7 p.m at 4321 W. Flamingo Road. Admission is $25 for men. All women get in free. To make cabana reservations, call 938-9999.

Vintage Lounge: Likely the most unique bar/lounge in Orlando, Vintage has put forth a truly different approach to entertainment and nightlife with its style, decor, and entertainment.
Pass Value: Free Entrance, Free Drinks all night for the ladies (Thursdays)

Egalement au programme : danseurs, danseuses, feu d'artifice intérieur, cadeaux, et surprises ... Un lancement à ne manquer sous aucun prétexte !!! BE THERE !!!
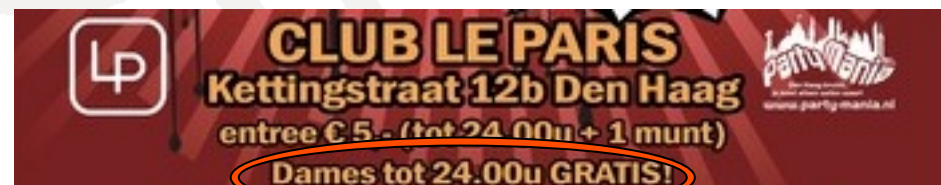
>>> LIVE ON FUN RADIO de 00.00 à 04.00 <<<

Entrée gratuite pour les femmes de 22h à minuit !!!

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ZATERDAG 20 NOV

DAMES GRATIS VOOR 24U

CLUB LE PARIS
Kettingstraat 12b Den Haag
entree € 5,- (tot 24.00u + 1 munt)
Dames tot 24.00u GRATIS!

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Two-sided markets: characteristics

- Two distinct groups of customers with distinct characteristics and preferences
- They *have to* participate both in order for a market to exist
- The extent of participation of one group determines the extent of participation of the other group
- They need a 'platform' to find each other
- Positive externalities arise by finding each other
- The platform internalises (part of) the externalities created at both sides of the platform

Two-sided market platforms: examples

- Credit cards
- Playstation game console
- Microsoft Windows operating system
- iPhone appstore
- eBay marketplace
- Newspaper
- SDP

Two-sided market platforms: characteristics

- Specific dynamics
  - Difficult to start: Chicken and egg-problem
  - Easy to keep going: network effects
  - Coase theorem doesn't hold; Platform can continuously force customers on one side to enter or subsidise other side
- Pricing
  - No profit maximisation in individual market, but cross-subsiding
- Platform as central locus of value and control
  - Platforms and 'architectural advantage' (Jacobides et al, 2006)
  - Performance bottlenecks (Baldwin & Clark, 2006)
  - Locus of high transaction costs (Baldwin, 2007)
  - Gatekeeper functions: filter and select information but also qualitatively alter the informational content through active accumulation, processing and packaging (Ballon, 2008)
- Multihoming as central issue

Platforms and openness

Table 6.1   Comparison of openness by role in platform-mediated networks

	Linux	Windows	Macintosh	iPhone
Demand-side user (End user)	Open	Open	Open	Open
Supply-side user (Application developer)	Open	Open	Open	Closed
Platform provider (Hardware/OS bundle)	Open	Open	Closed	Closed
Platform Sponsor (Design and IP rights owner)	Open	Closed	Closed	Closed

Eisenmann et al, 2009

- Basic trade-off: adoption vs. appropriability
- Different aspects of openness: who can use it; who can offer compatible app; who can bundle it with larger platform; who can change the design
- Strategies: horizontal (interoperability, licensing..) and vertical (absorbing complements, efficiency gains, backward compatibility,..)

Platform Typology

- 2 Parameters and their interrelation:

  - Control over **Assets**: tangible and intangible elements that construct the value proposition
  - Control over **Customers**: elements related to the customer relationship (e.g. charging and billing, profile and identity, branding, etc.)

- Variations of these parameters

Platform Typology

	No Control over Customers	Control over Customers
No Control over Assets		
Control over Assets		

Platform Typology

	No Control over Customers	Control over Customers
No Control over Assets	**Neutral Platform**	
	The platform owner is strongly reliant on the assets of other actors to create the value proposition, and does not control the customer relationship	
	Example: PayPal	
Control over Assets		

Platform Typology

	No Control over Customers	Control over Customers
No Control over Assets	**Neutral Platform**	**Broker Platform**
	The platform owner is strongly reliant on the assets of other actors to create the value proposition, and does not control the customer relationship	The platform owner is strongly reliant on the assets of other actors to create the value proposition, but does control the customer relationship
	Example: PayPal	Example: eBay
Control over Assets		

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	Example: PayPal	Example: eBay
Control over Assets	**Enabler Platform** The platform owner controls many of the necessary assets to ensure the value proposition, but does not control the customer relationship.	
	Example: Intel	

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	Example: PayPal	Example: eBay
Control over Assets	**Enabler Platform** The platform owner controls many of the necessary assets to ensure the value proposition, but does not control the customer relationship.	**System Integrator Platform** The platform owner controls many of the assets to ensure the value proposition, and establishes a relationship with end users. Entry of third party service providers is encouraged.
	Example: Intel	Example: iPhone

The Power of Network Effects

Number of telephone users
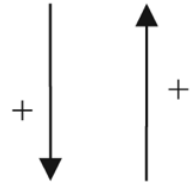
Value to user

(a)

Bansler & Havn, 2004

Number of PC users
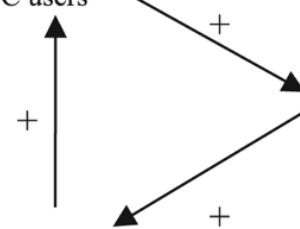
Supply and variety of application software

Value to user

(b)

type: **reach** rank page views   range: 7d 14d 1m 3m 6m 1y 2y 3y 4y **5y**   smoothing: -1 0 +1 +2   permalink

Daily Reach (per million)

cbs.com   myspace.com   nbc.com   mtv.com

40,000

30,000

20,000

10,000

0

2002   2003   2004   2005   2006

006 Alexa   2006 Apr 14

Gene

20
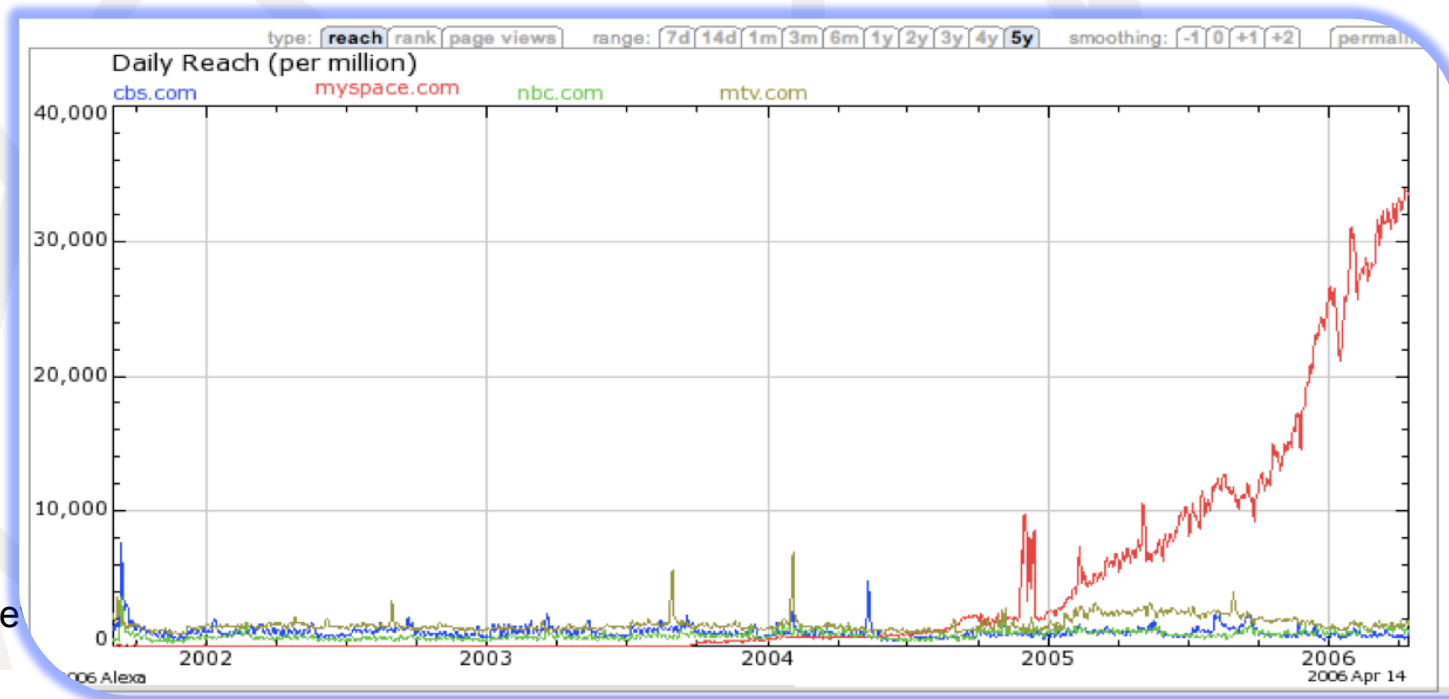
Strategies that leverage network effects

- Move early (cfr. Sony Playstation)
- Subsidize product adoption (penetration pricing; value is less for initial customers) (cfr. PayPal)
- Leverage viral promotion (cfr. Skype)
- Expand by redefining the market to bring in new categories of users (cfr. Nintendo Wii) or through convergence (cfr. iPhone)
- Alliances and partnerships (cfr. Android)
- Distribution channels (cfr. Microsoft Media Player)
- Seed the market (cfr. Adobe Acrobat)
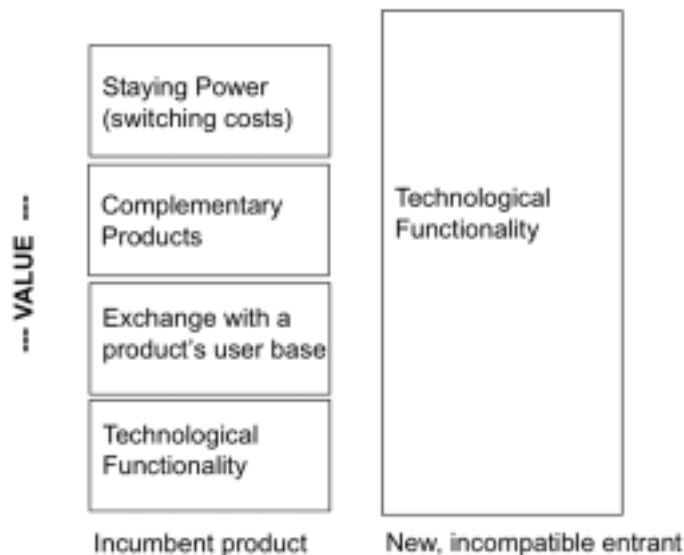- Encourage the development of complementary goods – this can include offering resources, subsidies, reduced fees, market research, development kits, venture capital (cfr. Facebook fbFund)
- Maintain backward compatibility (cfr. Apple's Mac OS X)
- Rivals: be compatible with larger networks (cfr. Apple's move to Intel)
- Incumbents: constantly innovate to create a moving target and block rival efforts to access your network (cfr. Apple's efforts to block access to its own systems)
- Large, well-known followers: pre-announcements (cfr. Microsoft) (Gallaugher, 2008)

Implications for wannabe platforms

- **Tough to compete as new entrant**
- **Big Delta Needed**
- **The economics of interoperability**

	Staying Power (switching costs)	
	Complementary Products	Technological Functionality
--- VALUE ---	Exchange with a product's user base	
	Technological Functionality	
	Incumbent product	New, incompatible entrant

Schilling, 2003; Gallaugher & Wang, 2008

Size		1	5	10	20	40	80	100	1,000
	Value	0	10	45	190	780	3,160	4,950	499,500
1	0	1	15	55	210	820	3,240	5,050	500,500
5	10	15	45	105	300	990	3,570	5,460	504,510
10	45	55	105	190	435	1,225	4,005	5,995	509,545
20	190	210	300	435	780	1,770	4,950	7,140	519,690
40	780	820	990	1,225	1,770	3,160	7,140	9,730	540,280
80	3,160	3,240	3,570	4,005	4,950	7,140	12,720	16,110	582,660
100	4,950	5,050	5,460	5,995	7,140	9,730	16,110	19,900	604,450
1,000	499,500	500,500	504,510	509,545	519,690	540,280	582,660	604,450	1,999,000

Bennett, 2011

Implications for regulation (1)

- Traditionally, there have been reasons for regulating some platforms and not others
    - In electronic communications, access operators are regulated in an ex ante fashion because they control essential facilities and because the prospects for competition are regarded as limited. In other parts of the ICT industry, dominant players are regulated ex post under competition law
- Under the new Digital Agenda (2010), Europe appears to move further towards regulating platforms in general, i.e. the access to platforms, the interoperability between platforms, and so on
    - New European interoperability rules foreseen for the electronic communications industry, based on antitrust rules related to the abuse of market position, referring to a significant position. In this case, obligations will be imposed related to licence interoperability information, to ensure consumer choice in software as well as hardware.

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Implications for regulation (2)

- Traditional regulatory analysis is not equipped to deal with platforms'
  - pricing and cross-subsidisation strategies
  - bundling strategies
  - collaboration strategies
- For platform regulation, it is indispensable to take into account the specific business models employed by those platforms
  - e.g. criticisms of EU ruling of Microsoft server case (Pardolesi & Renda, 2004)
- => How to make the link between platform regulation and specific business models?

Platform types and regulatory concerns (1)

	No Control over Customers	Control over Customers
No Control over Assets	Neutral Platform	Broker Platform
	The platform owner is strongly reliant on the assets of other actors to create the value proposition, and does not control the customer relationship	The platform owner is strongly reliant on the assets of other actors to create the value proposition, but does control the customer relationship
	Regulatory concerns: - *no specific concerns*	*Regulatory concerns:* - *Customer lock-in (raising switching costs)* - *Price squeeze of service / content providers*

Platform types and regulatory concerns (2)

	No Control over Customers	Control over Customers
Control over Assets	Enabler Platform	System Integrator Platform
	The platform owner controls many of the necessary assets to ensure the value proposition, but does not control the customer relationship	The platform owner controls many of the assets to ensure the value proposition, and establishes a relationship with end-users. Entry of 'third-party' service providers is actively encouraged
	Regulatory concerns: - *Refusal to deal* - *Strategic design of products (interoperability)* - *Lock-in of service/content providers*	*Regulatory concerns:* - *Customer lock-in (raising switching costs)* - *Price squeeze of service / content providers* - *Refusal to deal* - *Strategic design of products (interoperability)* - *Lock-in of service/content providers* - *Cross-subsidisation*

Drive towards Interoperability and Standards

Digital Agenda Pillar 2
Interoperability and Standards

Action 21: Propose legislation on ICT interoperability

Action 22: Promote standard-setting rules

Action 23: Provide guidance on ICT standardisation and public procurement

Action 24: Adopt a European Interoperability Strategy and Framework

Action 25: Analyse the consequences of requesting significant market players to licence information

Action 26: Member States to implement European Interoperability Framework

Action 27: Member States to implement Malmö and Granada declarations

Implications for SDPs?

- **Challenges for platform leadership**
  - Service creation and delivery environments outpace traditional SDPs
  - Overlay SDPs, appstores and apps highly successful
  - Move towards on-demand management services in the cloud?
- **Where is the Big Delta?**
  - Open and truly standardised vs geographical/vendor-/telco-specific implementations and mechanisms
  - Universal application development environment and SDK
  - Link with operator billing system
  - Link with other telco resources
  - Link with local partners in verticals, enterprise market, creative clusters
  - Link with local environment, e.g. 'national cloud', smart cities, sensor networks

Conclusion

- Absolute need to distinguish clearly between (only) technical and (technical as well as) business platforms

- This implies focus on business ecosystem management in two-sided or multi-sided markets

- It implies also a very detailed analysis of multihoming trade-offs at various levels

- Wannabe platforms should either focus on huge functionality leap or on openness and interoperability

- A Platform is not a Platform: Different platform types based on value and control parameters

- Regulatory drive towards (some) platform neutrality: interoperability and standards

- SDPs should focus on the Big Delta

Thank you for your attention

Mail: Pieter.Ballon@vub.ac.be

Web: http://smit.vub.ac.be/ and http://www.ibbt.be