Serious Gaming Ecosystems: Challenges and Opportunities

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Ecosystems: definition

• An informal and evolving network of (legally independent) specialized actors—whose interests need to be brought into alignment—functioning as a unit and interdependent in the collaborative development of a value proposition to materialize in the market place.

• Such actors may include several groups of stakeholder firms such as, component suppliers, partners, developers, users, buyers, complementors, rivals, universities, research institutions, and communities.
Ecosystems: Key concepts

- An informal and evolving network of (legally independent) specialized actors—whose interests need to be brought into alignment—functioning as a unit and interdependent in the collaborative development of a value proposition to materialize in the market place.
  - Network or community need to be aligned
    - Ecosystem leader: aka. Orchestrator, keystone (player, organization), hub, integrator, shaper, owner: sets the structure, rules, governance arrangements in the ecosystem.
    - Governance structure: contracts, licensing, royalties etc.
  - Co-value creation
    - While independently maximizing their own profits, ecosystem partners need to collaborate
  - Evolves over time
Theory

• Industry evolution
  – Specialization within industry architectures (Langlois and Robertson, 1995; Jacobides and Winter, 2005; Jacobides et al., 2006)
  – As an ecosystem matures, the focal concern of participants will shift from value creation to value capture (Di Stefano, Gambardella, and Verona, 2012; Moore, 1993)
• Initial emergent phase: incentivize partners to join the ecosystem
  – Moore (1993): during the birth of an ecosystem ‘it often pays to cooperate’.
• Later: attempt to reap the benefits of the already established ecosystem
Our interest

• How do the challenges during the emergence of an ecosystem lead to future inefficiencies that are hard to overcome by its members?
  – Initial conditions at time of ecosystem creation can have a lasting impact on the degree to which value is captured (Uzunca, Sharapov, Tee, 2016)
  – Incentives of firms to invest in establishing a vibrant ecosystem (Jansen, Brinkkemper, Finkelstein, 2009)

• RQ: What are the challenges and inefficiencies that occur during the emergence of an ecosystem, and how do they limit future strategies of its partners?
A serious game
A serious game
A serious game

A Look at Videogames About Alcoholism, Depression and Cancer

Developers are exploring deeply personal and wrenching stories

Aug. 15, 2013 8:16 p.m. ET

Take the role of the father of a child with terminal cancer and who has been given only a few months to live
A serious game
A serious game
Why serious games?

• Increasing importance
  – design, engineering, and production of serious games are still in their infancy

• Moving target
  – emerging business with multiple uses in industry, education, health and the public administration sectors

• Growth potential
  – 2.35bn € global market (IDATE 2014 estimate)
  – fragmented and needs critical mass to compete globally
Paradigm shift

• Gamification is the new way of learning!
  – Learning by virtual reality and simulated role playing
  – Learning by doing, involvement, engaging motivating, and entertaining
  – Capacity to find & use information (not memorize)
  – Simulate complex/costly environments and dangerous/critical situations
Entertainment Gaming Ecosystem

Game software ecosystem (van den Berg, 2015)
How to categorize serious games?

Serious Game Classification

The online classification of videogames

This site is an online and collaborative classification system suited to videogames, based on multiple criteria. The games are classified according to their:

- **Overall category**: A global category computed after the criteria below.
- **Gameplay**: Does this title feature stated goals to reach like any “game”? Or is the player totally free to make his own choices in a “play-based” way? Besides these two overall gameplay types, the core rules of each title are analysed and represented as GamePlay bricks.
- **Purpose**: Besides its play value, does this title feature other purposes? For example, is it designed to train you? To broadcast a message? To tell you a story?
- **Market**: What are the application domains that actually use this game? Entertainment? Education? Healthcare?...
- **Audience**: Which audience does this games target? This criteria gives you information about the age range and kind of audience targeted by each title.
- **Keywords**: A series of keywords defining the genre and the theme of each game, based on the analyses performed by classification contributors.
Serious Gaming Ecosystem

Content (Asset) providers
e.g. Chinese, Indian art teams, Unity asset store

Game engine providers
e.g. Unity, Unreal, Cry Native code,

Interface Providers
e.g. Oculus (virtual glasses)

Serious Game Developers
(many small developers, design studios, multinational corporations and government organizations)

B2B: Training personnel, education
e.g. Logistics, military, hospitals, architecture, advertising, flight simulator, and retail

B2C: Practicing skills e.g. language, typing, fitness, flight simulator etc. or
Creating awareness via inspirational/emotional games towards a larger goal
e.g. Alcoholism, Cancer, depression
Challenges

• How should the architecture and governance be in a healthy serious gaming ecosystem?
  – Who is the ecosystem leader in serious games? Unity?
  – Relative bargaining power among partners
  – Changing incentives, evolution of structure over time

• Scalability problem?
  – Incentives to invest in the ecosystem
  – Quality of the content (libraries, assets)
    • Shallow games, with characters and technological development way behind the entertainment video games

• Component-based approach
  – Compatibility, reusability
  – Multi-homing?

• Institutions to include in the ecosystem?
Thank you!
Questions, Comments

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