

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

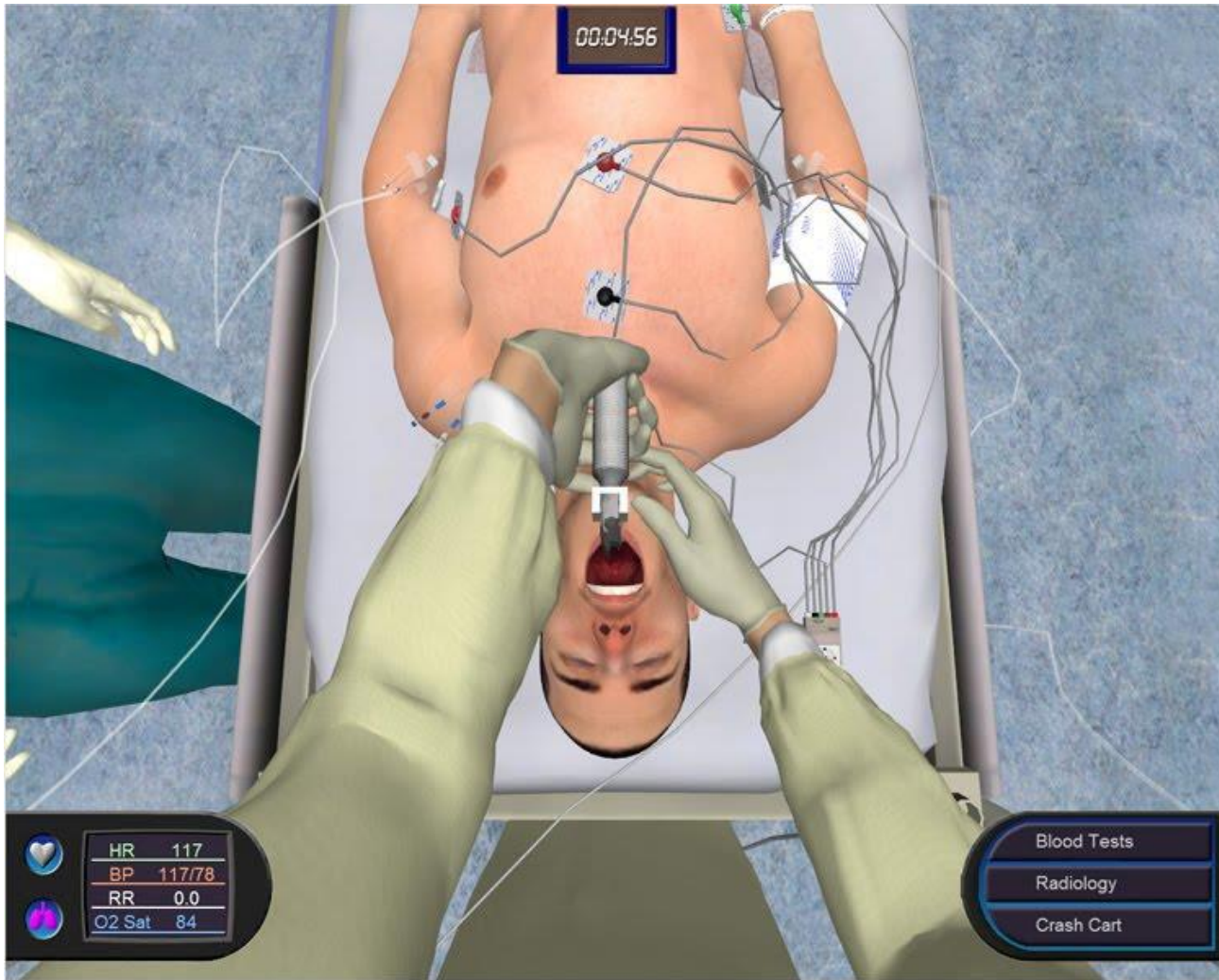
Our interest

- 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

1 of 10

'That Dragon, Cancer' is an autobiographical story that puts players in the role of a father whose son is dying of cancer. Here, creator Ryan Green's pixilated image. *THAT DRAGON, CANCER*



A serious game



A serious game



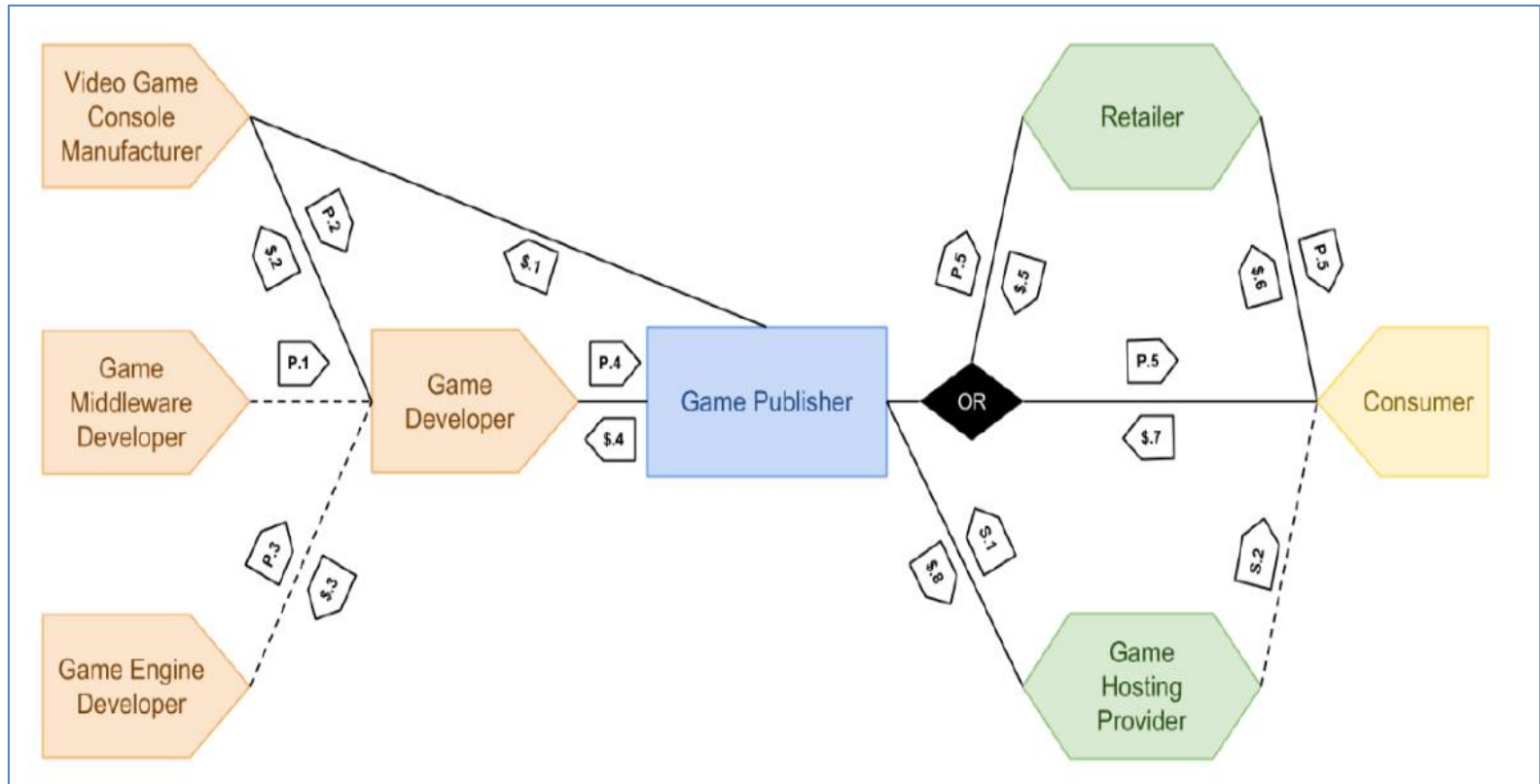
Why serious games?

- 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?

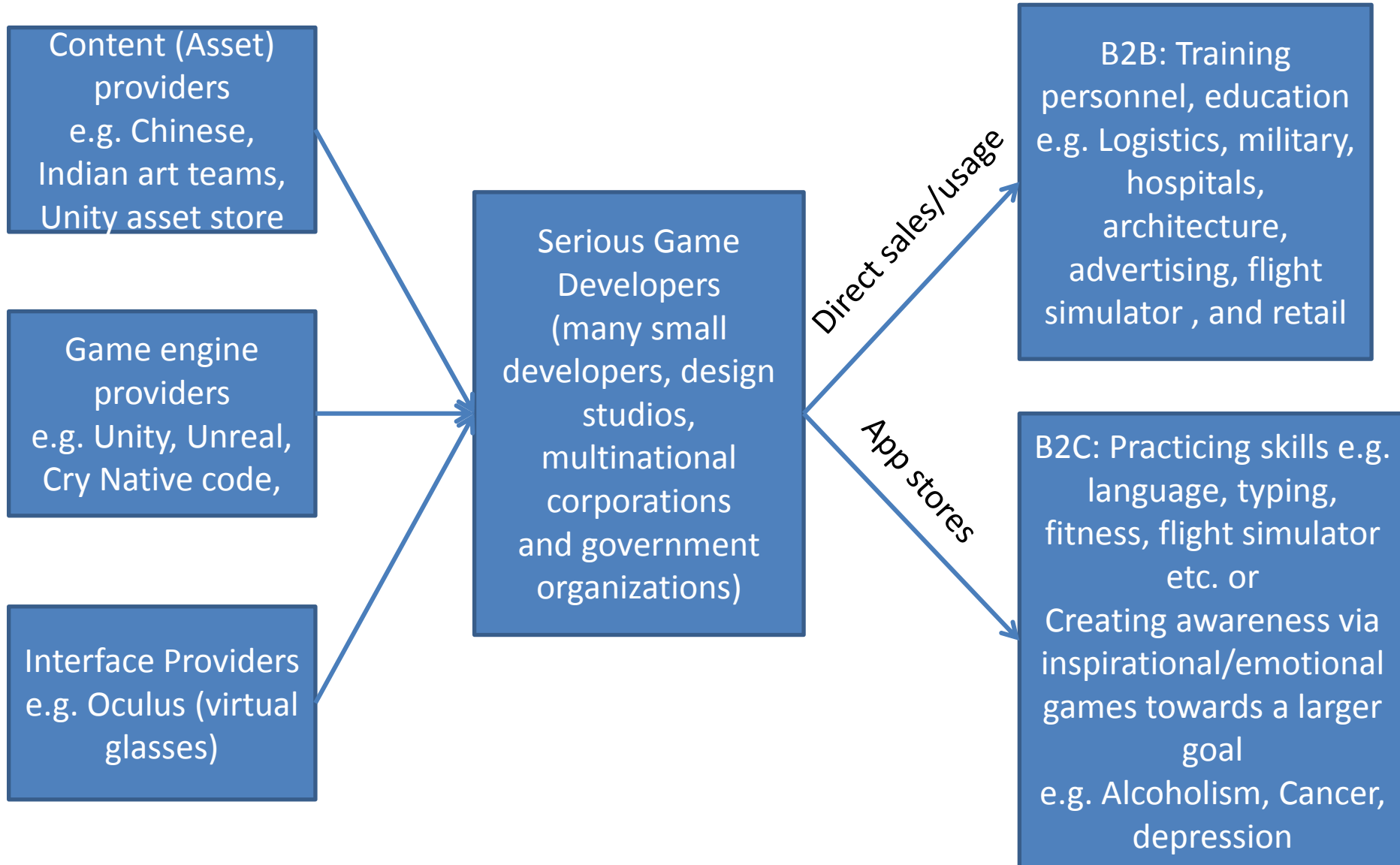


The screenshot shows the top section of a website titled "Serious Game Classification". The header has a dark blue background with the title in large, bold, orange and white letters. Below the title is a navigation bar with links for "Home", "Games", "Machines", "Contribute", and "About" (highlighted in orange). There is also a search box with the word "Search" next to it. Below the navigation bar, there are three more links: "About", "Classification guidelines", and "Academic approach", each in a light blue box. To the right of these links is a large orange button that says "Find out more". Below this is a horizontal line, and then the text "The online classification of videogames" is centered.

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 features 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 features *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



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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