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## Supplement to the Treatise

### WOLFGANG RUNGE: TECHNOLOGY ENTREPRENEURSHIP

How to access the treatise is given at the end of this document.

Reference to this treatise will be made in the following form:

[Runge:page number(s), chapters (A.1.1) or other chunks, such as tables or figures].

To compare the games business in the US and Germany to a certain degree references often address the case of the German firm Gameforge AG. For foundations of both the startups serial entrepreneurs played a key role.

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## Zynga, Inc.

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Zynga, founded in 2007 and a privately held company until its 2011 IPO, develops social games (casual games) played on various social networks including Facebook, as well as on mobile devices including the Android-based ones, iPhone and iPad. Games include a social element, giving users a new way to interact with friends online. It has become well known for titles such as Farmville, CityVille or CastleVille.

Zynga was growing at record speed. But Zynga was *heavily dependent on Facebook and its users*.

Reportedly valued at ca. \$20 billion by mid of 2011 Zynga was preparing to file paperwork for an initial public offering (IPO) with the US SEC (Securities and Exchange Commission) [Zynga 2011] to raise \$1 billion. "Any deterioration in our relationship with Facebook would harm our business," as well as stockholders, Zynga said in its IPO filing.

The filing underscores the degree to which Facebook Inc. was a critical ingredient in Zynga's success, and one of its biggest risk factors.

"We have benefited from Facebook's strong brand recognition and large user base. If Facebook loses its market position or otherwise falls out of favor with Internet users, we would need to

identify alternative channels for marketing, promoting and distributing our games, which would consume substantial resources and may not be effective.” [Zynga 2012]

Zynga viewed itself as the world's leading online social game developer [Zynga 2011].

Zynga went public with its shares priced at \$10, a mark that valued the gamemaker at about \$7 billion. But since its December 2011 IPO it has lost about 70 percent of its stock value and was at ca. \$2.85 by the end of September 2012 and ca. \$2.3 at the end of November 2012. But Zynga's earliest investors, including entrepreneur Reid Hoffman and five venture firms, still stand to secure profits on shares they bought for less than 50 cents each [Thurm and Tam 2012]. By early February 2014 the “52 Week High /Low” were \$4.97 / \$2.50.

*Zynga as the face of an overhyped Web initial public offering* showed immediately after its IPO a marked drop in stock price. There is clearly no single factor explaining the price drop. However, there was a theory making the rounds shedding some light on mechanisms to influence – which means increase – stock value of tech firms for their IPOs.

People suspected Zynga's stock has been propped up over the past month by the underwriters, who agreed to buy shares if the stock started to perform poorly. The stock purchases would have created steady demand for the stock and kept the price relatively stable. Furthermore, the theory goes, the underwriters have since met their obligations for buying the stock, and therefore are no longer buying as many shares. Incidentally, Morgan Stanley – one of Zynga's underwriters – disclosed that it had purchased nearly 16 million shares in December. But while the disclosure, filed with the Securities & Exchange Commission, adds fuel to the theory, it is unclear if those shares were purchased as part of the IPO, or if they were spread out throughout the month [Duryee 2012].

The rapid spread of smartphones and tablet computers over the past few years, coupled with faster cellular-network speeds, is changing the business model for games played on mobile devices. The global mobile-game market is expected to increase nearly fivefold from \$3.77 billion in 2010 to \$17.6 billion in 2015, according to the research arm of Tokyo-based Ichiyoshi Securities [Wakabayashi and Ante 2012].

## Remarks Concerning the Market and Industry Environments

A rather detailed overview of the gaming market and industrial environment is found in Runge [2014:ch. 3.4.1] and the case of the German games firm Gameforge AG [Runge:B.2].

If the game is free-of-charge, selected add-ons for gaming may require fees, from a few cents to several dollars/euros for users with premium or super-premium access. This leads to two types of playing, free-to-play (F2P) and pay-to-play (P2P).

In this context a sort of “80:20 rule” applies: 1) A small percentage of players account for most of the revenue (around 10 percent) and 2) for large firms offering a number of games a small number of games generate the majority of revenues.

Generally, non-advertisement revenues result from subscription, premium accounts and “virtual goods” [Runge 2014:Box I.16]. For social networks the business model works by offering a product or service free of charge (typically software, content, games or Web services) while charging a premium for advanced features, functionality, or related add-ons is called a “*Freemium model*” (“free” and “premium”). For instance, revenue stems from selling features that give players an edge, such as virtual magic swords.

Free-to-play (F2P) refers to any video game that has the option of allowing its players to play without paying. The model was first popularly used in early massively multiplayer online (MMO) games targeted towards casual gamers, before finding wider adoption. Free-to-play can be compared to pay-to-play (P2P), in which payment is required before using a service, and freemium, means that a product or service is offered free of charge while a fee is charged for users to access premium features.

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The key issues, hence, are how successful F2P publishers are in converting free users (all their games can be played for free) into P2P or freemium users.

Various forms of F2P (non-console) games include

- Browser-based games including Massively Multiplayer Online Games (MMOGs)
- Client-based MMOGs games
- Social network-based games, for instance, using Facebook
- Casual games.

Zynga, Inc. covers the last two categories, for instance; the German firm Gameforge AG [Runge:B.2] covers browser-based MMOGs and client-based MMOGs.

A *casual game* is a video game targeted at or used by a mass audience of casual gamers. Casual games are typically played on a personal computer online in Web browsers. Casual games tend to be those that have simpler game play and engaging game design, they also tend to offer *users who come across the game to step in and play* a game within minutes. They require no long-term time commitment or special skills to play, and there are comparatively low production and distribution costs for the producer.

The goal with casual games is to appeal to as wide of an audience as possible, including those that have normally fallen outside the traditional "gamer" profile. Casual games tend to be smaller in scope and more limited in terms of game play compared with console or AAA desktop titles, and with that comes lower end-user expectations about the casual game experience [Higgins].

The gaming press tends to use AAA to mean a really high quality game. Marketing folks will use it to refer solely to the advertising budget (which means the actual quality of the game is irrelevant). Producers usually will use it to mean both (high quality and a big marketing budget) – comparable with the "blockbuster model" of the pharmaceutical business [Runge 2006:173,193].

Zynga's games have been characterized by competitors as "*stumble upon*" games, meaning you stumble upon them while catching up with your friends on Facebook. They are not *destination games*, where a user seeks them out because they really want to play them [Takahashi 2011a].

## Key Metrics

Growth and revenue models for commercialization of social networks including online games, particularly monetization tracking, are described by Runge [Runge 2014:Box I.16].

- "Registered Users"
- "Active Users" (returning after first day and first login)
- "Active to pay": How many actives pay = *Conversion Rate*
- MAU - Monthly Active Users
- DAU - Daily Active Users
- MUU - Monthly Unique Users
- PCCU Peak Concurrent Users
- ARPPU - Average Revenue per Paying User
- ARPU - Average Revenue per User
- CPA/CPL: Cost per Acquisition/Lead (of user).

For games, for instance, "registered users" means primarily all registered users having passed a registration process for all games. But, it may include players who did not delete their entries and there may also be millions who just made one trial of a game and did not come back.

## The Entrepreneur(s)

Looking for Zynga's founders is complex. Searching Google for "Zynga founders" the answer is: "Best guess for Zynga Founders is Michael Luxton, Mark Pincus, Eric Schiermeyer, Steve Schoettler, Andrew Trader" – Mentioned on at least nine Web sites." Undoubtedly, Mark Pincus, then CEO of the firm, is the "lead entrepreneur" and driver [Wikipedia 1].

Mark Pincus (born 1966) [Wikipedia 2] is a serial entrepreneur and before co-founding Zynga, he founded three firms, Freeloader, Inc., Tribe Networks, and SupportSoft. In 2009, Pincus was named "CEO of the Year" in The Crunchies and in 2011 was named Founder of the Year for 2010, as well.

According to the literature [Wikipedia 2] Pincus holds a Bachelors of Science (BS) in Economics from the Wharton School of the University of Pennsylvania and an MBA from Harvard Business School. After graduating from Wharton he spent two years as a financial analyst, then in venture capital and investment for two further years. After having attended business school he took a job as a manager of development at Tele-Communications, Inc., now AT&T Cable. A year later, he joined a VC firm as a vice president where he led investments in new media and software start-ups for a year in Washington, DC.

In 1995, Pincus launched his first startup, Freeloader, Inc., a Web-based push technology service that was acquired seven months later by Individual, Inc. for \$38 million. He launched his second company, Support.com, in 1997. And in 2003, at age 37, Pincus founded his third startup, *Tribe.net*, one of the first social networks. Tribe.net partnered with major local newspapers and was backed by The Washington Post, Knight Ridder Digital, and Mayfield Fund [Wikipedia 2].

Pincus left Tribe.net in 2005 but repurchased the company from lenders in 2006 when it was nearly out of money. In 2007, Cisco Systems acquired the core technology assets of Tribe.net to develop a social networking platform for its digital media services group [Stone 2007]. Pincus co-founded his fourth company, Zynga Inc., in July 2007.

Tribe.net, actually, has to be seen in its context in 2003 to draw the line to Zynga. There was a set of three startups with the founders all began their various networking sites with the understanding that the market would be big enough to let each specialize and not compete with one another directly: Mark Pincus of Tribe.net (Tribe Networks, Inc.), Reid Hoffman of LinkedIn, and Jonathan Abrams, of Friendster, in which all three invested [Festa 2003].

- Friendster was to be the purely social site where friends could introduce one another, match make and date.
- LinkedIn, ready to announce a Series A funding round of \$4.7 million led by Sequoia Capital, would cater to *professionals looking to network and hire* [Runge:ch. 3.4.2.1,B.2].
- Tribe.net was meant to integrate a *classified ads model* with a personal network.

Now that venture capital money and influence was raining on the startups, the friendly atmosphere among the three entrepreneurs was beginning to deteriorate. And as Friendster was hammering out details of its most recent cash infusion – a \$13 million Series D investment – Pincus and Hoffmann formed a limited partnership without Abrams, in order to purchase the so-called "Six Degrees" patent for \$700,000.

The "Six Degrees" Patent (US number 6,175,831, "Method and apparatus for constructing a networking database and system" by Weinreich et al.) was filed January 17, 1997 and granted to Six Degrees of Separation Inc., a social networking site that came – and went – a few years before the current wave, on Jan 16, 2001. When Six Degrees went out of business, the patent was purchased by Youthstream Media Networks, who in September 2003, auctioned the patent to Reid Hoffman and Mark Pincus for \$700,000, along with related intellectual property rights and software [Festa 2003].

In buying the patent, Hoffman deliberately excluded Abrams from the deal fearing that Friendster's investors would try to bid him out. Hoffman described the Six Degrees patent as "central to this field." The Six Degrees patent initiated a healthy head-start to a flurry of patent applications that concern social networking startups. "Everyone wants to protect themselves in whatever way they can, so when it comes time to start arguing, they have something." And Hoffman said "Right now you're hearing a lot of spurious patent threats. And that's why I moved quickly to get a patent that was foundational." And furthermore, he added that "it would be very difficult for Friendster to move into the professional arena." [Festa 2003]

At that time tension among the increasingly competitive Bay Area networking entrepreneurs was not new.

Mark Pincus strove for *independence* – and, based on his personal financial situation, could follow this route. His view was that *entrepreneurs should keep control of their company* and should seek board members/investors who will be partners, not bosses. He advocates that *you be a CEO in your job, whatever it is* [Verga 2010].

Correspondingly, if an investor does not like the idea of the entrepreneur keeping control, his preference is to go and find someone else. His entrepreneurial approach is reliance on close social ties to assess the business idea and investing in the idea. Hence, “get your smartest friends together, and if they wouldn’t invest in your company, pull the plug.” [Verga 2010].

Pincus’ “friends” in this context obviously means those who had already experience with firm foundation – and money.

“His board, staff, and investor lists are filled with longtime friends.” [Fast Company 2011]

“If you construct your agreements right, VC’s can be great partners. And raising money is important for *security*. Even if your company is profitable, having money in the bank prepares you for the unexpected.” [Verga 2010]

By 2007 Mark Pincus had become an experienced serial entrepreneur and angel investor and has built a network of people which considerably facilitated founding his fourth firm. And Reid Hoffman also corroborated the security aspect of capital being in effect with Zynga’s foundation strategy and operations.

“Zynga ...has raised a great deal of capital yet the company’s founder and CEO, Mark Pincus, has yet to use most of it. He raised that money in order to *bring in strong board members who could help him* build his gaming empire. The capital those investors bring to the table is just insurance.” [Hoffman 2010] (Emphasis added)

Not astonishing Zynga (and Pincus), in its plan for an initial public offering (*IPO*), would go for an unusual *triple-class ownership structure* that will allow its founder and chief executive, Mark Pincus, to *keep tight control over voting power after its IPO*. The company was offering Class A shares to new investors, but keeping Class B and Class C shares within the control of the original owners, including management. While Class A shareholders will be entitled to one vote per share on company matters, Class B and Class C shares will entitle their bearers to more than one vote per share.

## The Business Idea, Opportunity and Foundation Process

The US company Zynga [Wikipedia 1] was founded in October 2007 in San Francisco based on the belief that *play* – like search, share and shop – as *general macro trends* would become one of the core activities on the Internet, continuing to capture an increasing proportion of consumer leisure time. Social games were viewed as a new form of entertainment.

It was originally organized in April 2007 as a California limited liability company under the name Presidio Media LLC [Zynga 2011].

It was essentially funded by Mark Pincus [Arrington 2009]. “They were the first to figure out how to connect online gamers with their offline friends.” “They solved this problem through social networks.” [Fast Company 2011]

As a serial entrepreneur Mark Pincus had learnt much of the management skills on the job. For founding his previous firms he was opportunistic about starting companies. But for Zynga he had tried *intentionally to create an “Internet Treasure”*. That means knowing one’s *goals* and being able to *quantify success*, and let a business go if it is not successful [Verga 2010].

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To introduce social components into gaming Pincus selected to rely on Facebook. Pincus was a minority investor in Facebook [MacMillan 2010].

Almost obsessed to “win”, Pincus conceded in a video “I knew that I wanted to control my destiny, so I knew I needed revenues, right,” and continued (emphases added)

“Like I needed revenues now. So I funded the company myself but I did every horrible thing in the book just to get revenues right away. I mean we gave our users poker chips if they downloaded this zinky toolbar which was like, I don’t know, I downloaded it once and couldn’t get rid of it. \*laughs\* We did anything possible just to get revenues so that we could grow and be a real business...So control your destiny. So that was a big lesson, controlling your business. So by the time we raised money we were profitable.” [Arrington 2009]

Facebook said users were complaining about spam-like messages that appeared every time one of their game-playing friends [MacMillan 2010]. Arrington [2009] reported that “Zynga has been scamming users from the beginning quite intentionally as part of their revenue model,” but said in 2009 “he intends to make sure his company’s games don’t include scammy offers.”

The perceived opportunity around 2007 (and extrapolate) included [Zynga 2011]:

Rapid Growth of Free-to-Play Games:

According to In-Stat, a market intelligence firm, the worldwide market for the sale of virtual goods was \$7.3 billion in 2010 and was expected to more than double by 2014. For more (and elder) market data refer to the Gameforge case [Runge:B.2].

Growth of Social Networks as a key trend that is seen to continue to drive the growth and popularity of social games:

Over the past decade, social networks have emerged as mainstream platforms that enable people to connect with each other online, share information and enjoy experiences with their friends and families. In 2010, there were approximately 1.0 billion users of social networks globally according to IDC, a market research firm, including over 500 million active users on Facebook. IDC forecasted that the number of users on social networks globally will grow to 1.6 billion by 2014.

Emergence of the App Economy:

Social networks and mobile operating systems have opened their platforms to developers, transforming the creation, distribution and consumption of digital content. In the “App Economy” developers can create applications accessing unique features of the platforms, distribute applications digitally to a broad audience and regularly update existing applications.

In the first seven months of 2008 Zynga collected around \$100 million from various investment firms and notably William “Bing” Gordon, a partner at Kleiner Perkins Caufield & Byers (KPCB) and Reid Hoffmann (ca. \$3 million). Bing Gordon, who also worked as Electronic Arts Chief Creative Officer, and Cadir Lee, Pincus's longtime entrepreneurial running buddy [Fast Company 2011], provided at least important guidance for the company [Fast Company 2011]. The company received its first venture capital funding of \$5 million in 2008 when it had just 27 employees. VCs poured in another \$209 million in 2009.

Cadir Lee also signed on to the firm [Fast Company 2011] and was Executive Vice President and Chief Technology Officer. Lee's mission was to build an analytics engine that would measure every aspect of the game experience, so that employees could evaluate users' behavior to improve every game, every day. His efforts became the lifeblood of the company. "It's not just getting the data back to offer the right feature," Pincus says. "It's data that helps us offer the right social experience." Added Lee: "Analytics are usually seen quarterly. I wanted it to be part of the culture." [Fast Company 2011]

By 2011 Zynga “raised hundreds of millions of dollars to maximize its ability to make large investments in teams, games and infrastructure” (over \$500 million estimated), “while Zynga has generated positive operating cash flow.” [Zynga 2011]

For instance, Google has quietly invested somewhere between \$100 million and \$200 million in Zynga. It was assumed that Zynga will be a cornerstone of a new Google Games, free online portal. And it would not be a surprise to see PayPal being replaced with Google Checkout as the primary payment option. Zynga was supposedly PayPal’s biggest single customer [Arrington 2010] – before Zynga had to go for Facebook Credits. Google obviously had learned that any consumer-focused platform needs games in order to thrive.

Zynga offers several types of games via Facebook – “Virtual World” games, role-playing games, card games and puzzle games. Virtual World games, such as Farmville, CityVille or Frontierville, “are graphical in nature, involve building a landscape of some sort (for instance, frontier, city, farm) and focus on character progression via gaining experience and items. The games are designed to be short duration play, meaning that in most cases, game-play time is limited due to the mechanics of the game.” [Martin 2011] A very detailed description of the mechanisms playing Zynga games is given by Martin [2011].

Figures issued suggest that 55 percent of all social gamers in the US are female. “More women are playing Farmville than watching soap operas.” Meanwhile, women spent more time playing Zynga games than any other demographic. 53 percent of Zynga players are females aged between 25 and 44. These represent the “core gamers” [Holt 2011] contrary, for instance, to German Gameforge which focus on MMOGs.

## **Corporate Culture**

Pincus wanted to create the right culture for the company. Growth of Zynga over the first three years of its existence in terms of revenue and number of employees (Table 2) occurred so fast, that the startup had to turn to professional management like a large firm. Any company, especially in Silicon Valley, that is growing quickly can outgrow the capabilities of senior leaders.

“Pincus began by phasing out the company’s early sweatshop vibe.” ‘We were so desperate for people just to be writing code,’ he admits. ‘We’d grab any kind of contractor, spiffing people for working weekends. We were at risk of being a mercenary culture versus a missionary one,’ echoing a presentation shared with him by VC John Doerr.” [Fast Company 2011]

“Mercenary culture,” providing services or works merely for monetary gain, is seen as a typical trait of US culture [Ritenbaugh 1994] – seen primarily by Europeans this way.

The company had autonomous teams for each game. And Pincus constantly searched for new ways to give employees a sense of “creative ownership” – in line with his view of it. This can be especially challenging for employees working on older games with flagging numbers. When the newcomer Bethke delivered a tough critique of a sputtering game, he expected a bloodbath. Pincus, rather than teeing off on them, asked the team, “If you could do anything with this game, and you weren’t worried about me or the numbers, what would you do?” The brainstorm that followed revived both the game and the team’s spirits. “One of our core values is that everyone is the CEO of the thing that they do,” Pincus said [Fast Company 2011].

Pincus advocated that any employee be a CEO in the job, whatever it is. Correspondingly, Zynga set quarterly goals at the corporate level, and then rolls those down to employees so that each person knows his or her role in reaching that goal. And his conviction was that if the boss has not given the employees a clear enough vision for them to do that, he is not doing his (or her) job [Verga 2010].

Like its Silicon Valley predecessors, Zynga prided itself on a work environment filled with special perks meant to create an atmosphere that keeps things playful and rewarded employees for hard work, such as fully stocked snack area in each office, weekly happy hour events, monthly poker tournaments with prizes including weekend trips to Vegas or Lamborghini car rentals, haircuts, massages and acupuncture in the appropriately named “Zen Room.” [Kaplan et al. 2010] But

"Work is going on around the clock; Pincus is encouraging employees to develop pet projects during weekend-long programming marathons." [MacMillan 2010]

In particular, Pincus and Zynga followed a very rational and analytic data-driven approach to game development. This *data-driven approach to game play is antithetical to the video-game industry's auteur-driven predilections*. "They're not in it for any lofty artistic goal," said Ian Bogost, a game designer and Georgia Tech professor, characterizing Zynga's offerings as uncreative, unchallenging experiences. "They're like the Wall Street hedge-fund guys of games." [Fast Company 2011]

According to Zynga's [2011] operational philosophy "Games should be data driven. Our culture combines the creative with the analytical. We develop and operate our games as live services with *daily, metrics-based player feedback*. This allows us to continually iterate, innovate and invest in the content our players love."

Zynga employees study such things as which features are popular, which days of the week people play, which demographic groups play the longest, and who sends out the most invitations. They then use the insights to "ghetto-test," to use their oddly literal term, new game elements. "Some users get a slightly different flow, user interface, or even a feature, to see how they interact with it," said Luke Rajlich, CTO of FarmVille, a game that was conceived and launched in six weeks. There are hundreds of tests running every day, in almost every game. "We can access every activity in any given hour in FarmVille," Rajlich said. "We have recorded 3 billion neighbor connections."

Zynga-ites are refreshingly unapologetic about how they operate. If you want to mildly insult someone at Zynga, said Erik Bethke, who sold his company, GoPets, to Zynga, "just say, 'It sounds like you have a lot of conviction about that,' which is code for 'You don't have the data to back that up.'" "The testing Zynga does is cold and rational, he admits, but "that's why we are successful. The rest of the industry isn't interested in how people use their products." [Fast Company 2011]

Zynga tracks the popularity and financial success of each game in real time, and Pincus makes the data available to employees so they know if projects are succeeding or failing. All this means *fierce internal competition*. Pincus is a "professed data obsessive." "Pincus began drafting "M.I.A.," or missing-in-action, lists to keep track of senior employees who were not doing a good job or who needed to be placed on more ambitious projects." [Rusli 2011]

## Cultural Issues

Rusli [2011] characterized Zynga to have a "*tough culture*." Related issues surfaced with Zynga in the period before IPO – and continued after the IPO with a dramatic decline of its stock value. "In dozens of e-mails to a companywide list, frustrated workers complained about the long hours and stressful deadline periods." "Employees log long hours, managers relentlessly track progress, and the weak links are demoted or let go." [Rusli 2011]

"Instead it's going to be a Harvard Business School case study on founder overreach – this will be a cautionary tale." [Rusli 2011]

As the discord increased this jeopardized the company's ability to *retain top talent* at a time when Silicon Valley start-ups are fiercely jockeying for the best executives and engineers. It could also hamper deal-making, a critical growth engine for Zynga, which has spent about \$119 million on acquisitions in 2009 and 2010. In 2011 founders of a firm Zynga wanted to acquire worried about the company's reputation after hearing rumors of the company's internal state, said two people with first-hand knowledge of the situation. Instead the firm agreed to a rival offer from Electronic Arts. Also several startups have rebuffed Zynga [Rusli 2011].

One person called the effort part of Mr. Pincus's strategy to *continually assess employees* and *create a meritocracy* where the biggest rewards would go to biggest contributors, and nobody could just "rest and vest."



According to Wikipedia in US law, “vesting is to give an immediately secured right of present or future enjoyment. One has a vested right to an asset that cannot be taken away by any third party, even though one may not yet possess the asset. When the right, interest or title to the present or future possession of a legal estate can be transferred to any other party, it is termed a *vested interest*.” (Example: inheritance law).

With the IPO fast approaching, competitors were preparing to poach disgruntled staff members of Zynga. One recruiting firm sent cookie baskets to some 150 Zynga employees. An executive of Zynga’s competitor Electronic Arts (EA) assessed the situation as follows: “I expect a lot of game and tech companies will begin recruiting Zynga’s talent after their equity becomes liquid.” “Competitors will make the case that they offer much more compelling opportunities for creative people.” [Rusli 2011]

In 2011, Zynga also started to reduce equity packages (their contractual stock compensation packages) through demotions. Some employees were offered a choice: take another role with the same salary and a smaller equity package, or leave the company. Several people close to the company said that it affected only a limited number of senior employees. But the perception remained that Zynga began demanding that certain employees surrender some shares or be fired. “If word comes around that the company grants equity and takes it back ... people may not want to go to work for you.” [Scheck and Raice 2011]

Zynga did not only encountered losses of employees, but had also a remarkable attrition rate of executives leaving following the firm’s IPO and struggled with a flagging stock value in 2012 [Letzing 2012].

Thier [2012] called this an oppressive corporate culture, which means tyrannical, repressive, or unfair.

However, a culture like that of Zynga is not uncommon in the US game industry. For instance, in the US employees at Electronic Arts and Activision Blizzard have filed lawsuits against their employers, with claims of hostile work conditions and withheld compensation. But according to EA, “We’ve learned that when companies treat talent as a commodity, the consequences are severe.” “It takes years to repair a reputation.” [Rusli 2011]

## Market Entry, Expansion and Diversification

During the very early phase, Zynga “collected” games. In 2008 Zynga bought YoVille, a browser based virtual world game and large virtual world social network game. YoVille was the first of the successful -Ville series of social/casual games by Zynga [Wikipedia 3]. It had 60 million unique daily active users in December 2009 [Wikipedia 1].

The early big success was FarmVille which is derived from “Happy Farm”.

“Happy Farm”, released in 2008, was No. 14 among the “The 15 Most Influential Games of the Decade”. It is a Chinese social network farming game and played predominantly by users in Mainland China and Taiwan that “inspired a dozen Facebook clones” – the biggest being Zynga’s Farmville, launched in June 2009. “Happy Farm’s blend of planting, growing and harvesting crops turned out to be the simple game-design formula that had gigantic repercussions.” [Kohler 2009]. FarmVille was conceived and launched in six weeks [Fast Company 2011].

Fundamental entrepreneurial/innovation-related approaches of Pincus are firstly *to be better than others*.

“FarmVille wasn’t the first farm game. It wasn’t even the first farm-set social game. The reality is that he did it better than everyone else.” [Fast Company 2011]

Secondly, Zynga follows a quasi “structural platform” approach. Zynga’s pattern of success in *similar games*, FarmVille, CityVille, CastleVille, FrontierVille etc., is keeping the basic structural formula for new games and changing the components, their interactions and additions. This can be viewed as a kind of *component innovation* which entails

changes to one or more components of a product system without significantly affecting the overall design [Runge:ch. 3.1].

For instance, "Where in FarmVille you're growing crops, in CityVille you're growing neighborhoods." "In FarmVille you're tending to your animals and in CityVille, you're tending to your residents and your people. And in both cases, it's all about playing with your friends." And "the concept is Monopoly meets Main Street." In December 2010, Zynga's game CityVille surpassed FarmVille as its most popular game [Wikipedia 1]. CityVille was also Zynga's first game to launch in five different languages – English, French, Italian, German and Spanish – as well as the company's first game to use 3D-rendered technology.

In addition to making their own games, Zynga has created a network which allows third party developers to become part of the Zynga network. Zynga claimed to be the largest social game network on the Web. Notably Zynga.org raised more than \$10 million for several international non-profits by occasionally selling "virtual goods" for charitable causes [Wikipedia 2].

In essence, growth of Zynga in terms of revenue and number of employees occurred so fast (Table 2) that the startup had to turn very early to a style of management as run in a large existing firm. "The single biggest challenge is managing growth in the face of total uncertainty," said Pincus [MacMillan 2010] – and also in the face of ties to Facebook.

Such growth of business and operations requires continuously spending significant resources. This means, enhancing information and communication systems must ensure that employees and offices around the world are well-coordinated and can effectively communicate with each other and enhancing the internal controls to ensure timely and accurate tracking and reporting of all of the operations.

Furthermore, there is a challenge of integrating the large numbers of new hires. As of March 31, 2011, approximately 64 percent of Zynga's employees had been with the firm for less than one year and approximately 92 percent for less than two years. Zynga had to expend significant resources to identify, hire, integrate, develop and motivate a large number of qualified employees [Zynga 2011].

By 2011 Zynga's fate appeared inextricably tied to its relationship with Facebook Inc. Facebook sought to capitalize on Zynga's popularity, and the social network entered into an addendum with Zynga under which virtual goods purchased on Facebook for use in Zynga games are denominated in Facebook credits. In that way, Facebook receives 100 percent of the revenue, and then distributes 70 percent of that to Zynga.

Zynga said it expects to continue to derive a "substantial portion" of its revenue and players from Facebook for the "foreseeable future." [Murphy 2011]

Further development of Zynga occurred essentially via *non-organic growth*, for instance, [Wikipedia 1]:

- On December 2, 2010, Zynga announced that it acquired the Texas-based mobile game developer Newtoy, Inc., developers of the game "Words With Friends" and renamed the studio to Zynga With Friends.
- Zynga acquired the New York-based game developer Area/Code, renamed Zynga New York.
- In March 2011, Zynga announced the acquisition of the team from Massachusetts game developer Floodgate Entertainment. It was *Zynga's tenth acquisition in ten months*.
- In April 2011, Zynga announced the acquisition of MarketZero, an online poker tracker company.
- Early in 2012 Zynga agreed to buy OMGPOP, the maker of massive pictiory-like hit Draw Something with an estimated pricing heard to be \$180 million upfront plus a \$30 million earnout [Cutler 2012].

Correspondingly, Zynga had to provide a comprehensive set of common technology services and systems available to all of its studios and game production engineers, game designers and product managers to leveraging a scalable infrastructure [Zynga 2011].

Concerning the future of Zynga there was an approach to involve gamers more in the creation of games: "We've almost gotten too good on data and analytics," Pincus said. "We're at risk of losing sight of the end user and their delight."

By 2011, Pincus expected in five years there will be a global audience of almost 2 billion social gamers, and he planned to let them take a greater role in creating his games. In addition, he introduced a new metric to study: the company's Net Promoter Score, the percentage of customers who are active advocates or detractors of its brand. "It's how eBay, Google, and Facebook all rate themselves," Pincus said [Fast Company 2011] (cf. the Gameforge case: "We make only money, if our customers identify themselves long term with a game.").

## Vision/Mission, Risks and Business Model

Zynga's mission (vision) including fun seems to express a *player-centric approach* [Zynga 2011].

- **Connecting the world through games.**

If we can make games simple, accessible and social the world will start playing.

"Games have grown to become the second most popular online activity in the United States by time spent, even surpassing email. Play, invest and express are player actions that we believe are central to our social games." [Zynga 2011].

Basically Zynga's offerings follow a "Freemium model" [Runge:ch. 3.4, Box I.16]. Its type of Free-to-Play (F2P) games cover

- Social network-based games
- Casual games (easy to learn, playable in short sessions).

Compared to pay-to-play business models, the free-to-play (F2P) approach tends to attract a wider audience of players, thereby increasing the number of players who have the potential to become paying users. By attracting a larger audience, the F2P model enables also a higher degree of in-game social interaction, which enhances the game experience for all players [Zynga 2011].

However, *activity in the game is regulated* by the amount of "energy" you have. For instance, one "energy" will return every 5 minutes in Frontierville, regardless of activity or if the game is even loaded. "As an example, a new player starts with 15 energy, and a long time player may have 35 energy. There are ways to increase the energy pool, but they are rare (completing a specific collection) or costly (purchasing an item for 27 "Horseshoes", obtainable by spending roughly US \$3.15." [Martin 2011] "Horseshoes" represent "game currency."

These limits differentiate Zynga from other F2P games, such as those offered by German Gameforge AG [Runge:B.2] with limitless MMOG gaming options. It is not uncommon for top level players to spend over 30-40 hours a week playing in order to advance their character or guild.

Zynga generates revenues through the in-game sale of virtual goods and advertising. The *primary revenue source* is the sale of virtual currency that players use to buy in-game virtual goods within its otherwise free games [Runge:Box I.16].

Some forms of virtual currency are earned through game play, while other forms can only be acquired for cash or, in some cases, by accepting promotional offers from advertising partners. [Zynga 2011] This was a "business that's largely alien to US investors {but} is common among games companies in China and South Korea" [Wingfield and Cowan 2011] and common in Germany since 2003/2004 (Gameforge AG [Runge:B.2]).

Revenue growth will depend largely on Zinga's ability to retain existing players, attract new players, convert non-paying players and increase revenue per player.

However, Zynga's success depended on the good graces of the social network, where almost all of its games are played. Zynga's IPO filing [Zynga 2011] underscored the degree to which Facebook Inc. is a critical ingredient in Zynga's success, and one of its biggest risk factors. "We generate substantially all of our revenue and players through the Facebook platform and expect

to continue to do so for the foreseeable future." "Any deterioration in our relationship with Facebook would harm our business." In the filing the company mentions several instances where Facebook policy changes hurt it. The dependence on the social network affects also other factors of the business model:

But, while Zynga was investing heavily in new categories of games that do not rely on Facebook, notably mobile games for smartphones and the iPad, they have not yet become a significant part of the business [Wingfield and Cowan 2011]. Games are the most popular category of applications on smartphones, representing approximately half of the time spent on smartphone applications in the US [Zynga 2011].

According to the UK market-intelligence firm Mintel mobile could be a bigger market than Facebook. In mobile and tablet games alone, the market reached \$898 million in 2010, and was expected to almost double to \$1.6 billion by 2015 [Walker 2011].

Players choose to enjoy the game in different ways and can be classified into six categories [Runge:ch. 3.4]. For MMOGs of, for instance, German Gameforge (B.2), this typically entails guild activities (raids), player-versus-environment (questing), player-versus-player (battle grounds), a wide variety of social interaction (chatting) and more. For Zynga's games there is usually no direct social interaction (such as, chatting, questing together, fighting each other).

Zynga's business model exhibits the following structural features ("value proposition").

**Table 1:** Advantages for Players [Zynga 2011] – and Disadvantages.

Play for free	Zynga provides the players with the opportunity to purchase "virtual goods" that enhance their game-playing experience. Zynga believes players choose to pay for "virtual goods" for the same reasons they are willing to pay for other forms of entertainment.  Zynga believes players are more likely to purchase "virtual goods" when they are connected to and playing with their friends, whether those friends play for free or also purchase "virtual goods".
Accessibility; low barriers to game entry'	"Accessible by Everyone, Anywhere, Any Time;" games easy to learn, playable in short sessions," and there is geographical and demographical diversity of players
State of the art technology	To be taken for granted
Individual enhancements	Benefits received by players from the purchase of "virtual goods" which are digital representations of real world entities.  Players can earn "virtual goods" through game play, receive them as gifts or purchase them.  Within these games, players can purchase virtual currency to obtain virtual goods to enhance their game-playing experience and extend the duration of the game session, enhance or personalize their game environments, accelerate their progress in the games and share and trade with friends.  A player may purchase decorative and functional items to personalize their game environment and express his/her individual taste or style
Social aspects	Social interactions, around trading goods, sending people trains and all kinds of things that one can do to play with each other, for instance, to friends to grow his/her city in CityVille.

<p>Fun</p>	<p>Zynga strives for keeping the games fun and engaging by regularly delivering new content, features, quests, challenges and “virtual goods” that enhance the experience for the players.</p> <p>As a result, the games are perceived by Zynga as a perpetual source of play, evolving with the community of players over time.</p> <p>Players express their personalities by designing and customizing the appearances of their characters and building and decorating their own virtual city, farm, homestead or restaurant. In CityVille, players can personalize the names of their store franchises: For example, friends can shop for virtual shoes at “City Soles.” Friends can also visit and admire each other’s creations.</p>
<p>Supportive of Social Good; contributions to charitable causes</p>	<p>Players are able to enjoy fun social games while also contributing to charitable causes. Through the philanthropic initiative, Zynga.org, launched in October 2009, players are enabled to contribute to charitable causes by purchasing specially created virtual goods in the games.</p> <p>For example, players were able to buy Sweet Seeds in FarmVille, the proceeds of which were used to build a school for children in Haiti. Zynga have raised more than \$10 million for donations to non-profit organizations from payments made by players.</p>
<p>Modes of payment</p>	<p>In May 2010, Zynga entered into an addendum to Facebook’s standard terms and conditions requiring the transition of the payment method to Facebook Credits, Facebook’s proprietary payment method, as the primary means of payment within the games played through Facebook. In July 2010, Zynga began migrating to Facebook Credit. And by April 2011 it had migrated all the games on Facebook to Facebook Credits.</p> <p>Facebook remits to Zynga an amount equal to 70 percent of the face value of Facebook Credits purchased by the players for use in the games. Zynga recognizes revenue net of amounts retained by Facebook. Prior to this addendum, Zynga used third-party payment processors and paid these processors service fees.</p> <p>On platforms other than Facebook, players purchase Zynga’s virtual goods through various widely accepted payment methods offered in the games including PayPal. For instance, an estimated 2 to 3 percent of “FarmVille” users – 5 to 10 million people – do use their credit cards to buy virtual goods [Kaplan et al. 2010]</p>
<p>Distractions, disturbances and social pressure</p>	<p>In-game advertisements are often seen as a distraction (cf. Gameforge AG – B.2).</p> <p>There is a game mechanism when playing on Facebook which is a constant reminder that you “need more friends” to play the same game, so that you may advance. This may be seen as social pressure [Martin 2011]</p> <p>“Social pressure” exemplified:          “To encourage you to find more friends to play the game, Zynga may limit access to specific resources such as animals, trees or buildings. Without a certain number of friends playing the game, you cannot access these resources. Even when a specific mission requires you to interact with the resource that you do not have access to, it will stay restricted.” [Martin 2011]</p>

Little localization	Users from many countries. However, little location of games in terms of languages (cf. Gameforge AG with games in 55 languages, B.2) with Zynga offering, for instance, 5 languages for CityVille
Privacy	Related to Facebook's management of personal data which is partly questioned in Europe [Runge:ch. 3.4, Box I.14]

Zynga expected to continue to derive a "substantial portion" of its revenue and players from Facebook for the "foreseeable future." The addendum between Facebook and Zynga will expire in 2015 [Zynga 2011; Rodgers 2011].

### Advantages for Zynga

Economies of scale and almost free from recession effects	<p>Generating new games along structural lines, like FarmVille, CityVille, CastleVille or "Words with Friends" and "Hanging with Friends".</p> <p>Individual add-ons are affordable for any player, even in economic recessions</p> <p>But the related incremental and expectable changes in a commodity-like series of games may lead to disinterest of gamers.</p>
Sales of virtual entities	<p>The primary revenue source (ca. 95 percent) is the sale of virtual currency that players use to buy in-game "virtual goods". Some forms of virtual currency are earned through game play, while other forms can only be acquired for cash or, in some cases, by accepting promotional offers from our advertising partners.</p> <p>Zynga said its <i>paying players</i> are a "small percentage of its total players." [Zynga 2011]</p> <p>For accounting and reporting purposes Zynga adopts an approach to recording the revenue dividing those "virtual goods" into <i>consumables</i> and <i>durables</i> and treating them as if they actually existed. Depending on that definition, the company may book the revenue almost immediately or over the course of a couple of years [Runge:Box I.16].</p> <p>For example, a player of Zynga's CityVille might purchase energy allowing players to build structures and perform other activities more quickly, for instance, erect a teeming metropolis, which Zynga classifies as a consumable because its full use comes at the election of the player ("consumed" by a specific player action). When the player buys the energy, Zynga records the purchase as "deferred revenue" on the balance sheet, and when that player uses the energy in gameplay, the revenue is recognized on the income statement.</p> <p>Conversely, a player might buy a tractor on FarmVille to help manage a virtual farm (make players' virtual fields more productive) and accessible to the player over an extended period of time ("durables").</p> <p>In its filing Zynga said that future player behavior could change, thereby changing the period during which it recognizes revenue for its durable virtual goods.</p> <p>Players can primarily pay for virtual currency using Facebook Credits when playing games through the Facebook platform, and</p>

	can use other payment methods, such as credit cards or PayPal on other platforms.
Advertisements	Advertising revenue (ca. 5 percent of revenue) primarily includes branded virtual goods, sponsorships and engagement ads. Zynga generally reports its advertising revenue net of amounts due to advertising agencies and brokers.
Scalable technology and data.	Zynga processes and serves volume of content for its players every day, which it believes is unmatched in the social game industry.

Specifically the types of advertisements focus on the following.

- Branded Virtual Goods means, a brand ties advertising deeply into game play. A typical example is Farmers Insurance in FarmVille. Paramount Pictures recently launched a campaign in CityVille offering an in-game item to drive awareness of Kung Fu Panda 2.
- Engagement Ads means players can fill questionnaires about brand preferences and purchase behavior in exchange for in-game currency. For instance, a user might answer questions about his/her Visa card.
- Mobile Ads are served into free versions of Zynga mobile games like "Words with Friends". Advertisers have included Amazon or eBay, while Zynga has used the space to cross-promote other mobile games.

Zynga acquires most of the players through unpaid channels. For instance, Zynga has build a large community of players through methods of viral marketing (cf. Gameforge AG, B.2) and sharing features provided by social networks.

"Pincus said he is eyeing other ways to get his games in front of the masses." [MacMillan 2010] In 2010 Pincus brought in Owen Van Natta, a veteran of Amazon and Facebook (and a survivor of MySpace), to be executive VP of business operations and sit on the board. His mission was further grow revenue, attract talent, and scale Pincus's leadership vision. Along with fellow Facebook alum Mike Murphy, Van Natta was building an advertising business to bring traditional brands into the fold. Thus far, Zynga has run successful campaigns with 7-Eleven, American Express, DreamWorks, and McDonald's, which launched its own plot on FarmVille [Fast Company 2011].

Any time a game looks like a potential hit, the company deploys millions of dollars on ads promoting it to members of the social network. "In total, *Zynga spends between \$5 million and \$8 million per month for banner ads on Facebook*, according to NeXt Up! Research. The aggressive promotions *make it difficult for rivals to copy an idea for a game and make it as successful as Zynga's version*, says Lisa Marino, chief revenue officer of app startup RockYou. 'Social gaming is a math equation,' says Marino. "When you put millions of dollars down to protect [a franchise], you will win it." [MacMillan 2010]

## Intellectual Property

According to Zynga's filing for IPO [Zynga 2011] Zynga's business is significantly based on the creation, acquisition, use and protection of intellectual property. It uses a combination of trade secret, copyright, trademark, trade dress, domain name and patents to protect the games and other intellectual property.

Some of this intellectual property is in the form of software code, patented technology and trade secrets used to develop the games and to enable them to run properly on multiple platforms.

Zynga's mode of *patent protection* covers inventions originating from the company and they also acquired patents assumed to be useful or relevant to the business. Zynga owns one issued US patent and 78 patent applications pending worldwide. The obtained rights to use intellectual property are through licenses and service agreements with third parties. These licenses typically limit Zynga's use of intellectual property to specific uses and for specific time periods.

Other intellectual property Zynga created includes audio-visual elements, including graphics, music, story lines and interface design.

Zynga invested extensively in developing proprietary scalable technology infrastructure and game engine technology to support the growth of its business. The developed flexible game engine should provide leverage for the development and launch of new games. With each release, features and functionality are added to improve the core code base for future game development [Zynga 2011]

## Key Metrics

The basis for the *financial metrics* of Zynga [2011] according to its filing revealed:

- Only a small percentage of its players ever spend anything.
- A small number of games have generated a majority of revenue, and Zynga must continue to launch and enhance games that attract and retain a significant number of paying players in order to grow the revenue and sustain its competitive position.

By mid of 2012 Zynga had 292 million regular users but generates just 33 US cents per month from each [Wakabayashi and Ante 2012].

	ARPU	MAU	% Paying Users	Total Paying Users
<b>Zynga</b>	\$0.33	292,000,000	1.2%	3,504,000

Zynga [2011] differentiates how it accounts for its revenue, depending on the type of virtual goods sold. Revenue from *consumable* “virtual goods” like energy is recognized by the company *immediately* after a player’s game avatar consumes it. When the player uses the energy in gameplay, the revenue is recognized on the income statement. Zynga records the purchase as “deferred revenue.”

In contrast, revenue from *durable* virtual goods like tractors, which can be used over and over again, is recognized over the estimated average playing period of players for particular Zynga games, a period that ranges between 10 and 25 months.

According to Wikipedia in computing, an avatar is the graphical representation of the user or the user’s alter ego or character. It may take either a three-dimensional form, as in games or virtual worlds, or a two-dimensional form as an icon in Internet forums and other online communities. It can also refer to a text construct found on early systems such as MUDs (Gameforge AG, B.2).

Correspondingly the reporting (Table 2) exhibits “Booking” and “GAAP Booking” being in line with “Generally Accepted Accounting Principles”. For instance, difference between these bookings in 2009 was \$207 million and increased to \$242 million in 2010.

**Table 2:** Zynga’s revenue development according to differentiated booking.

Year	Booking (mio.)	GAAP Booking (mio.)	Employees
2008	\$36	\$19	157
2009	\$328	\$121	576
2010	\$839	\$597	1,483
2011	\$1,155	\$1,144	2,846
2012	\$1,148	\$1,281	3,058

Table 2 exhibits the tremendous growth of GAAP revenue and number of employees by a factor of 4 – 6 in its first three years of existence.



The sources of revenue is split proportionally according to

- Sales of “virtual goods”: 95 percent,
- Advertisement: 5 percent.

*Durable* virtual goods are 68 percent of online game revenue, while *consumable* virtual goods are 32 percent (of the overall 95 percent of revenue), according to Zynga’s filing.

In its fourth year Zynga became profitable (Table 3). But in 2011, on an unadjusted basis, Zynga did report a net loss of \$404 million, mainly because of ca. \$510 million in stock-based compensation to employees that was booked after the company’s IPO.

**Table 3:** Developments of Zynga’s costs and net income (\$, thousand) [Zynga 2011; Zynga 2012, Zynga 2013].

	2008	2009	2010	2011	2012
<b>Revenue</b>	19,000	121,000	597,000	1,144,000	1,281,267
<b>Total Costs and Expenses</b>	41,993	174,249	471,987	1,545,716	1,464,238
<b>Net Income (Loss)</b>	(22,077)	(52,822)	90,595	(404,316)	(209,448)

For the first half of 2011 Zynga was narrowly profitable, perhaps only because of an accounting change. “It seems like a small accounting change, but it shifted Zynga’s last financial report from a loss to a profit for the six months ended June 30.” “Zynga shortened the life of the durable virtual goods, its primary source of revenue in free-to-play games, to 15 months for the six months ended June 30, compared to 19 months a year earlier.” “The accounting estimate change added over \$27 million to this year’s first half revenues, meaning that without it, Zynga’s first half small profit would have in fact been a loss.” [Takahashi 2011b]

Concerning operational metric, towards the end of 2011, Zynga had more than 2,500 employees, many acquired in developer studio acquisitions over the past year at a pace of one a month. As it might take a crew of 25 people six to nine months to create a social game Zynga had in principle the potential to create tens of games [Takahashi 2011a].

Zynga’s operating metrics include DAUs, MAUs and MUUs which are given in Table 4.

Zynga claimed 60 million daily active users (DAUs) worldwide and 232 million monthly unique users in 166 countries (Table 4) – and 320 million (December 2010) registered users [Wikipedia 1]. According to AppData, an independent application Internet traffic tracking service, Zynga had more monthly active users on Facebook than the next 15 social game developers combined. Furthermore, according to AppData, Zynga had the top five social games on Facebook based on daily active users.

**Table 4:** Zynga’s operating metrics for monthly players by quarter [Zynga 2011; Zynga 2012].

Users (mio.)	2009		2010		2011	
	Sep. 30	Dec. 31	Mar. 31	Dec. 31	Sep. 30	Dec. 31
<b>Average DAUs</b>	24	58	49	48	54	54
<b>Average MAUs</b>	69	207	203	195	227	240
<b>Average MUUs</b>	63	124	110	111	152	153

On the other hand, looking at monthly development one can observe that over the year 2011 the Average MAUs remained almost unchanged (Table 5).

**Table 5:** Zynga's operating metrics for monthly players by quarters of 2011.

Users (mio.)	2010		2011			
	Mar. 31	Dec. 31	Mar.. 31	Jun. 30	Sep. 30	Dec. 31
<b>Average DAUs</b>	49	48	62	59	54	54
<b>Average MAUs</b>	203	195	236	228	227	240
<b>Average MUUs</b>	110	111	146	151	152	153

For Zynga the *display ad model* in which ads pop up while on a website was not a good revenue model for games. Therefore, Zynga looked at new advertising models for the Internet, for instance, one that is about engagement through virtual goods or product placement in games, not clicks [Raice 2012]. Zynga's ad types then included:

*Engagement Ads*, in which players can field questions about brand preferences and purchase behavior in exchange for in-game currency. For instance, a user might answer questions about his/her American Express card.

*Branded Virtual Goods*, in which a brand ties advertising deeply into game play. The best-known example is Farmers Insurance in FarmVille. And Paramount launched a campaign in CityVille offering an in-game item to drive awareness of Kung Fu Panda 2.

*Mobile Ads*, which are served into free versions of Zynga mobile games like "Words with Friends" and "Hanging with Friends." Advertisers included Amazon or eBay, while Zynga has used the space to cross-promote other mobile games.

## Competition

The gaming industry and its competitive situation are essentially determined by *low entry barriers* and *pace of new product launches*. Statisticians and game producers are constantly looking at what (virtual) goods and features catch on with players and which do not and adjust accordingly.

There is the problem of *scalability*, or adding vast amounts of users in a quick time frame, for the mobile gaming sector. And there is pressure for the firms to develop their techniques for staying in the flow and not flipping out, because this is demanding.

Low entry barriers mean that *initial financing* for a firm offering a game may require relatively low investment which means a number of such firms can (are) founded via bootstrapping with own funds, 3F initial financing or own/3F and low level debt financing as an LLC (GmbH). They may originate with the development of a game as a hobby or with an obsession and subsequent firm foundation (Gameforge AG, B.2). However, significant resources may be required for developing or acquiring additional games for the firms' survival and growth.

One of the big attractions for developers is how fast they can get a game to market. In the past, a typical videogame made for a console system like PlayStation would take about a year to develop, and then not be improved upon until one or two years later with a sequel.

Mobile-phone developers, by contrast, can make a change, improvement or upgrade to a game and push the code out to consumers within days. Because mobile games cannot handle as much data as those played on consoles, development of an iPhone or Facebook game can take just a few months. You can take your product from idea to launch in four to five months [Walker 2011].

"It's a gold rush." "A few people will become rich, but most won't." Success today won't guarantee long-term dominance. Life at the game maker is defined by "really short deadlines and really ambitious goals." [Walker 2011]

Zynga created popular games such as Mafia Wars (2008), FarmVille (2009) and CityVille (2010). By December 2009 more than 20 percent of Facebook users were playing FarmVille [Holt 2011].

But with users jumping quickly to new games, it needs a stream of hits, a feat that has bedeviled generations of movie-studio and television executives.

Generally, Zynga viewed its games to *compete for the attention of players with the other forms of entertainment* that comprise the global entertainment industry. Among the names of Zynga's competitors concerning games it mentions in its IPO filing there is, for instance, the German startup Wooga GmbH. But there are more substantial ones who develop social games for use on Facebook and other social networks. Some may create similar games to reach Zynga's players. It noted, for instance, Electronic Arts Inc./Playfish Inc. And Zynga envisioned facing additional competition if large companies with significant online presences, such as Facebook, Inc. itself and Google Inc., enter the scene [Zynga 2011].

Whatever the platform for its games, Zynga will have to continue to find effective ways to promote its products, and to keep users engaged despite a flood of similar offerings.

And Zynga [2011] admitted it has "limited experience developing games for mobile platforms. And it expected "to devote substantial resources to the development of our mobile games."

CEO Pincus would need all the intensity he can get. Electronic Arts (EA) upped the ante already in 2010 when it bought Zynga rival Playfish for \$275 million and stated. "Zynga is riding high." "But they may soon find out that the next three years are a hell of a lot harder than the last three." [MacMillan 2010]

In 2011 Zynga Inc. reported a 95 percent decline in quarterly profits and its first dip in a key metric it uses to measure growth. It "disclosed that profit in the second period ended June 30 fell to \$1.3 million from \$27.2 million a year earlier. Zynga also reported a decrease in bookings." [Raice and Smith 2011] Profits were affected by the lack of revenue from new games and an increase in hiring.

Zynga attributed the slowdown in growth to [Raice and Smith 2011]

- Not launching any new games in the first half of 2011 (in previous quarters revenue growth was largely due to the launch of new games)
- The effect of the transition to using Facebook Inc.'s virtual payment system, Facebook Credits.
- As of July 1, Facebook requires game developers to accept payments through Facebook Credits. Through credits, the company takes a 30 percent cut of all game-developer revenue.
- A start to shrink of user base, reporting 59 million average daily users for the second quarter, down from 62 million in the previous quarter.
- Zynga is facing rising competition on Facebook and an increasing number of alternatives.

By mid of 2011 Zynga had more than 2,500 employees. According to Takahashi [2011a], many employees were by developer studio acquisitions over the past year at a pace of one a month. It seemed in the past *Zynga was overloaded with employees*, considering it might take a crew of 25 people six to nine months to create a social game. Zynga essentially had enough people to build 100 games a year, but it was only trickling out titles once every few months. What are all of those people working on? They have been busy *expanding Zynga's game efforts in all directions*.

It was also said that said Zynga lags in mobile social networks behind companies such as DeNA and Gree, which are based in Japan [Takahashi 2011a]. And by early 2014 it was clear that Zynga "has struggled to remake itself amid changing consumer behavior." And "as smartphones and tablets flooded the market, Zynga stumbled to provide enough compelling games for them." [Sherr 2014].

Zynga's success spurred traditional videogame makers, not only EA, which has seen their revenues stagnate in the past few years, to dive into social gaming. Deep-pocketed Electronic Arts, known for console games, has emerged as Zynga's first substantial rival. EA's strategy is to use the expertise at Playfish, a social-gaming startup it acquired in 2009, to turn successful EA brands such as "The Sims" into Facebook games.

EA's goal was to win not just in the market for Facebook games, but across all digital platforms, including mobile devices. "EA should have zero trouble because they're already dominant in mobile," EA already had more than 100 apps for Apple Inc.'s iPhone and iPad." [Woo and Raice 2011]

According to an analyst the "Facebook version of The Sims, 'The Sims Social,' launched in August 2011 has climbed up the rankings very fast to No. 2 on Facebook, a venue where Zynga has dominated. In addition, it was said that competition from other social platforms was gaining momentum in the US, with big Japanese competitors aggressively entering the market for "social mobile games." [Raice and Smith 2011]

The Sims Social, which had 66 million monthly active users after just a couple of months was stealing gamers away from Zynga's top game, CityVille, which has fallen from more than 100 million users to 76 million [Takahashi 2011a]. The example of EA showed that it is possible to take market share away from Zynga.

According to Electronic Arts (EA) Zynga has a bit of a reputation for cloning other game developers' ideas. In 2012, Zynga was being sued by EA for "infringing EA's copyrights to its Facebook game, The Sims Social." And EA noted Zynga's history of cloning other developer's work and made the point: While other small developers may not have the resources to stand up against the social gaming company, Electronic Arts ... has the resources "to do something about it." EA said Zynga's The Ville "copied the original and distinctive expressive elements of The Sims Social in a clear violation of US copyright laws." The degree to which Zynga copied The Sims, said Electronic Arts, "was so comprehensive that the two games are, to an uninitiated observer, largely indistinguishable." When the company launched The Ville in June, virtually every reviewer noted the similarities to The Sims Social." [Lardinois 2012.

Zynga faced steeper and steeper competition from little developers and big opponents like Electronic Arts and Disney alike and it faced questions of whether it can keep producing new gaming hits, even as it works to move away from its dependence on Facebook. And not only its largest competitor EA was skeptical about Zynga's future (see above, its "next three years are a hell of a lot harder than the last three").

But also other kinds of gaming competition emerged recently for Zynga following a direction Zynga also may have thought of when in April 2011 it acquired MarketZero, an online poker tracker company. Shukla [2014] mentions the rising popularity of King Digital's Candy Crush Saga which took millions of users away from Zynga.

"Bwin.Party Digital Entertainment is an online gambling company, formed by the March 2011 merger of PartyGaming plc and Bwin Interactive Entertainment AG. The world's largest publicly traded online gambling firm, it is best known for its online poker room PartyPoker.com and its sports betting brand Bwin (officially styled bwin). It is headquartered in Gibraltar and quoted on the London Stock Exchange." [Wikipedia 4]

## Zynga's Fall and Dramatic Decline of Market Capitalization

When founded Zynga seemed poised to capitalize on the increasing interest in social gaming and it represented the largest initial public offering in the technology sector since Google made its debut in 2004. Pincus was a well-networked entrepreneur in Silicon Valley, who, after rubbing elbows with the likes of Mark Zuckerberg and Reid Hoffman [Runge:A.1.7; Figure I.195], who finally had a successful public company to call his own [Mac 2013].

Zynga had a relatively short operating history and a new business model, which makes it difficult to effectively assess the future prospects.

But by mid of 2012 Thier [2012] made the point that *Zynga's best days may already be behind them*, because they got big under a set of conditions that will never exist again,

fundamentally because every dollar that they make is going to cost them more than the one that came before it.

To make his point explicit that *social games are in a very different place than when Zynga started* he referred to two Zynga games – and Mafia Wars 2.

- In 2009 Mafia Wars was the smallest, marginal step up from a text-based game. It was a smash hit, fueling Zynga's meteoric rise alongside their iconic Farmville – a game that famously took only five weeks to make.
- In 2011 Mafia Wars 2 was bigger – and more expensive – than Mafia Wars in every way. It updated the old formula with animations, multiple characters, multiple locations to explore, new sound effects, music – everything, and still much cheaper than a console title.

Mafia Wars 2 did not really work. Mafia Wars 2 was shedding users practically from the day after it launched. By January 2012 the first Mafia Wars exceeds its sequel by 100,000 daily active users. But many of Zynga's online games have fizzled with consumers.

By the end of 2012 Zynga had shut down its well-known "PetVille" and "Mafia Wars 2" games, as well as many others, as part of cost-cutting measures the company put in place earlier this year. The original "FarmVille," at its peak, had more than ten million players logging in every day, according to AppData. "CityVille" broke the 10-million daily player mark, and "CastleVille" had 8.4 million daily players at its height, according to AppData. [Lynley 2012]

Lynley [2012] cites some games that were shut down, and their Facebook-connected number of users if available:

- Mafia Wars 2, on December 30 (200,000 monthly active users)
- PetVille, on December 30 (1,000,000 monthly active users)
- ForestVille, on December 30 (8,000 monthly active users)
- FishVille, on December 5 (400,000 monthly active users)
- Mafia Wars Shakedown, December 30 (1,000 monthly active users)
- Vampire Wars, on December 5 (120,000 monthly active users)
- Montopia, on December 21 (10,000 players)
- Treasure Isle, on December 5 (250,000 monthly active users)
- Indiana Jones Adventure World, on January 14, 2013 (580,000 players).

The firm-internal issues in the context of Zynga's IPO were outlined above in the context of corporate culture and leadership by its co-founder and CEO Mark Pincus, who owned 50.2 percent of Zynga's voting control after the IPO. "Zynga's performance is a pretty strong indictment of him." [Mac 2013] Pincus worked with outside consultants to improve his management skills, was trying to remake himself as its leader by ceding more control to deputies and improving communications [Rusli 2012].

Employee morale was hurting. "Mark's challenge is how to make great games when his assets – his developers – are literally walking out the door." Not only employees left, also departures of executives became dramatic [Rusli 2012].

Some of Zynga's largest games on Facebook were also stalling. Zynga had *failed to prioritize mobile development* and found that its online games did not easily translate to smartphones' smaller screens. "Mobile turned out to be more different than anyone expected, in terms of monetization and also user experience." [Rusli 2012] Zynga has struggled to reproduce its early success as more game-playing shifts to mobile devices.

Apart from the fact that Mark Pincus worked with outside consultants to improve his management skills, he also made several strategic moves in the second half of 2012 to halt the company's stock slide [Rusli 2012]:

- Reshuffling the executive team and delegating more control to deputies;
- Re-organizing the mobile division to integrate into every gaming studio;
- Distributing stock options to all employees, with the amount depending on performance;
- Starting a program to improve communication between executives and employees;

- Cutting 5 percent of staff and announced plans to shut certain offices to rein in cost.

Zynga had priced its IPO at \$10 a share and the next day after IPO it soared as high as \$11.50 before falling back, dropping to \$9.52 in its first 15 minutes of trading. The stock spent most of the day below \$10 and closed at \$9.50, down 5 percent from its offering price – a notable development.

Early in 2012 the stock price of the five-year-old company went up, but then continuously fell. When it was down to \$2.43 per share and down ca. 75 percent since the IPO it reached market capitalization of \$1.84 billion. And the LA Times noted, its assets including real estate, cash and securities are worth about \$2.46 per share. This would mean, at that position Zynga was worth less than itself [Rundle 2012].

*The cracks surfaced around April 2012*, as it became apparent that "Draw Something," a newly acquired game, was losing players. Zynga acquired the game's maker, OMGPOP, for \$183 million only six weeks after "Draw Something" was released [Rusli 2012]. Additionally, in April 2012, Pincus "made the eyebrow-raising decision to sell 16.5 million shares – about 16 percent of his Zynga stock – after the expiration of a lock-up agreement. Investor confidence in the company plummeted shortly thereafter, sparking lawsuits alleging insider trading." [Mac 2013]

This time when the stock rose to a high of close to \$14 represented an obvious tipping point to expect the beginning of Zynga's downward spiral.

The development of Zynga's share price  $S$  in 2012 can be described by Equation 1 which is an *equation of state*, a "dynamically stable state," but can generally be used to reflect semi-empirically revenue growth of NTBFs [Runge:Equation I.17]. The empirical factor  $n_R$  is an intensity covering *interacting firm-internal and external effects*. In particular, it may include responsiveness of a startup towards (changes of) the market and competitive environment. It is assumed to not only cover these effects but to include also *reinforcement* interactions of the dominant forces [Runge:Figure I.155].

Considering all the above described negative facts and issues within and around Zynga in March and April 2012 provided expectations of further development of Zynga's stock price to decrease significantly. To turn from growth to (exponential) decline requires  $n_R < 0.5$  in Equation 1.

#### Equation 1:

$$S(t+1) = n_R \cdot S(t) \cdot [ 1 + ( S(t+1) / S(t) ) ]$$

$t = 0, 1, 2, \dots, n$ ;  $n_R$  a state and environment characterizing (empirical) factor

Calculated and observed developments for Zynga's stock price are given in Figure 1. The semi-empirical approach uses as input parameters the *observed stock price data  $S$  for January and February* when the stock price was still increasing and uses  $n_R = 0.428$  for "satisficing" fit of the data. Considering the deviations between the two curves the large difference between high and low stock prices per day and month must be taken into account.

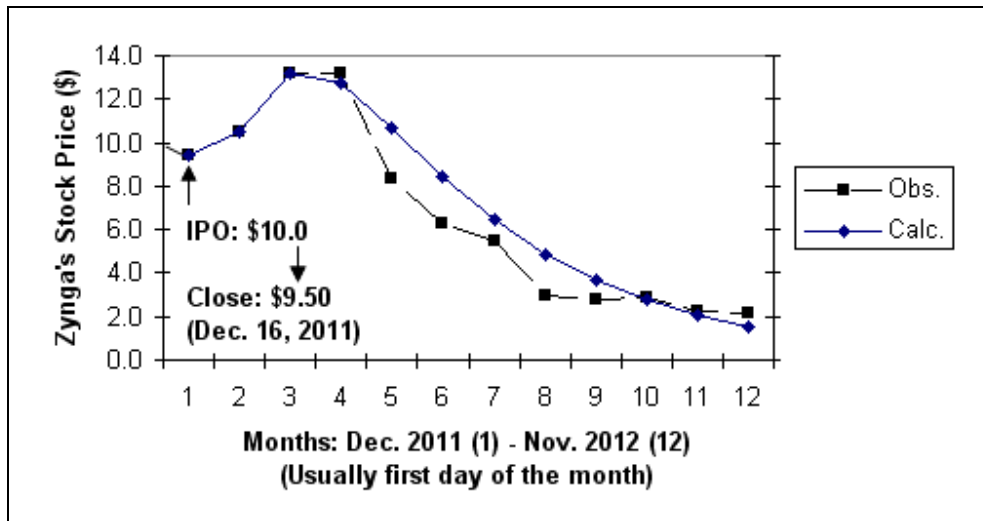
For instance, differences between "high" and "low" (Hi-Lo) were 3.43 in May 2012 and 0.42 in November 2012, respectively. Hence, this approach represents an acceptable accuracy for the expectation of Zynga's fateful state in 2012. Zynga shares have never recovered markedly.

By mid of 2013 Mark Pincus relinquished his position as CEO of Zynga, but remained at Zynga as chief product officer and chairman of the board, positions he already holds. Former Microsoft executive Dan Mattrick took over as CEO. Pincus' "ownership of more than 20 million Class C shares – which carry 70 to 1 voting power to commons shares – means Pincus still maintains a 61% voting control over Zynga, effectively giving him complete autonomy over the company's decision-making processes." [Mac 2013]

Stepping down as Zynga's chief also meant his personal fortune to go down, mainly along with his company's stock price. First introduced as a member of the World's Billionaires List in 2011, his fortune peaked at \$2 billion in time for the September 2011 Forbes 400, due to private market

valuations. Soon after the company went public, his net worth hovered closer to \$1 billion.” According to Forbes’ estimates his net worth stood at about \$780 million in 2013 [Mac 2013].

By April 2014 Pincus decided to give up all operational responsibilities at the company. He gave up his role as chief product officer. He will remain its non-executive chairman and largest shareholder – less than a year after handing the CEO post at the ailing videogame company to Dan Mattrick [Sherr 2014]. This additional step down of Pincus is another sign of how much Zynga’s fortunes have changed in recent years.



**Figure 1:** Calculated and observed stock price development of Zynga in 2012 (Source: Yahoo).

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