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Innovations in Company Design: Lessons from Valve Software

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Abstract

Shifts in today's business world have made innovation a key component of long-term business success. Incumbents, with proven business models, must search for new ways to deliver value, as the pace of change in almost all industries has increased. One of the best ways to stay ahead is to take a different (and better) approach to some basic aspect of business processes or organization structure relative to traditional management principals. This departure either process or structure is termed a company design innovation. Valve Software – creator of some of the most successful games in the world including Counter Strike, Left for Dead, and Team Fortress – has a consistent record of innovation in the past decade. This success is driven, in part, by Valve Software's organic approach to innovation: every employee choses what they work on and gets to help steer the company. This approach seems like it would foster chaos but has led to the creation of one of the most successful game studios. Understanding the company design innovations behind Valve's consistent track record of success is crucial to increasing the innovative potential of any business.

Keywords: *Company Design, Innovation, Valve Software*

1. Defining Company Design Innovations

Company design, in this context, means the management structure and processes of operation that define a company. Company design *innovations* are the creation of new management structures or processes of operation that challenging traditional management ideology and lead to other innovations that result in financial outcomes above the industry norm. *Distribution-based* innovations are those innovations that represent a departure from traditional distribution methods and lead to a temporary competitive advantage.

2. Company Design Innovations Matter

All types of innovation help drive growth within companies. In a survey conducted by McKinsey Consulting Company, seventy percent of senior executives said that innovation would be one of the top three drivers of growth for their company over the next three to five years.¹ Another study conducted in 2009 by Bain Consulting Company found that executives are expecting an increase in spending on general innovation-related tools in the next year.² Both of these studies encompassed a range of industries. This suggests that regardless of industry executives are focused on increasing innovation because they understand that the ability to innovate leads to lasting competitive advantage.³

Innovation plays an even larger role in driving growth for companies operating in competitive industries, like gaming companies, where a growing market, first-mover advantage, and a winner-take-all economy make competition fierce. This competition is best articulated by the mobile game market. It is expected to grow at an annual rate of 16 percent and reach \$13.9 billion in revenue by 2016.⁴ This increasing market size has been matched by a large increase in the number of apps on the iTunes App Store and the Android store. In early 2010, there were only 140,00 iOS apps available and now there are more than 700,000.⁵ The Android store has also grown rapidly and now has more than 700,000 apps available.⁶ The first-mover advantage in the gaming space is highlighted by Zynga Inc.'s success on the Facebook platform, followed by its struggles to break into the mobile gaming space. It was one of the first companies to create games, such as Farmville, for the Facebook platform and only moved to mobile after many other players, including Walt Disney Co. and Electronic Arts Inc., had released successful games.⁷ Lastly Canalys, an independent analysis firm, estimated that 25 iOS app developers took in 50 percent of all revenues during the first 20 days of November, 2012, exemplifying the winner-take-all effect for the gaming industry.⁸ It is important to note that all, except one, of these top 25 developers make games.⁹ Since this time there is little indication that this sort of winner-take-all effect has changed. Currently nine out of ten of the top grossing apps on the iTunes app store are games.¹⁰ So, for gaming companies, winners and losers in the market emerge, and the stakes are high.

¹ Barsh, Joanna and et. al., "Leadership and innovation," *The McKinsey Quarterly*, 2008, accessed on December 9, 2013, http://www.gesci.org/assets/files/Knowledge%20Centre/Innovation__Execution__2008.pdf.

² Rigby, Darrel and Barbara Bilodeau, "Management Tools and Trends 2009," *Bain & Company*, 2009.

³ "The Why, What, and How of Management Innovation," *Harvard Business Review*, February 2006.

⁴ Takahashi, Dean, "Mobile growth will fuel game market that hits \$86.1B by 2016," *Venture Beat*, June 6, 2013.

⁵ Lessin, Jessica and Spencer Ante, "Apps Rocket Towards \$25 Billion in Sales," *The Wall Street Journal*, March 4, 2013.

⁶ Ibid.

⁷ Baker, Liana, "Zynga releases first mobile game sense IPO," *Reuters*, Jan 5, 2012.

⁸ Grant, Robert, "Rivalry in Video Games," *Blackwell Publishing*, 2002.

⁹ "Top 25 developers account for 50% of app revenue," *Canalys*, December 4, 2012.

¹⁰ iTunes App Store, accessed on December 10, 2013.

While the console and desktop gaming markets are not experiencing as much growth, the markets are similar enough that they also experience first mover advantage and the winner-take-all effect. In the United States computer and video game sales have remained relatively flat at \$16 billion between 2009 and 2012.¹¹ The “console wars” left Microsoft, Nintendo, and Sony as the only major console providers as other companies like Sega and Dreamcast fell by the wayside.¹² All gaming companies, regardless of whether they operate in mobile, console, or desktop gaming markets, have to contend with fierce competition driven by a combination of market growth, a first-mover advantage, and a winner-take-all effect.

While there are many different types of innovation, company design innovations, as opposed to distribution innovations, are the most lasting in the gaming space. Valve Software has thrived over many years as a result of company design innovation. On the other hand, companies like Zynga, have struggled to release a series of highly successful games. The difference is that Zynga relied on distribution-based innovations that worked until other major game makers figured out how to leverage the Facebook platform. Valve Software on the other hand focused on company design innovations. Zynga has struggled to break into markets where they do not have a distribution-based advantage and they have also struggled to retain users on the Facebook platform as other companies like King (creator of *Candy Crush Saga*) find ways to compete with their distribution-based advantages.¹³

Company design innovations are important because they impact who chooses to work at a company and the culture of the company, believed to be the fundamental characteristics that allow for sustained product innovation. While distribution-based innovations tend to lose relevance in a few years, company design innovations lead to a lasting increase in innovations. The direct impact of company design innovations is based on the premise that people choose to work at companies that have workflow processes and an organizational structure that they fit into. The cultural impact comes from the connection between the people who work at a company and the culture the company has. These two are unequivocally tied together. The people working at a company and the culture of a company are the two most important drivers of innovation that places company design innovations as the upstream source of many innovations.¹⁴ While the future in most industries is hard to predict, the people and the culture of a company has a large impact on whether or not a company is able to adapt and survive which makes company design innovations one of the most important determinant of long-term company success.

¹¹ “Essential Facts About The Computer And Video Game Industry,” *Essential Software Association*, 2013.

¹² Buxmann, Peter et al., “The Software Industry: Economic Principles, Strategies, Perspectives,” 2013.

¹³ Evangelista, Benny, “Zynga struggling to regain its momentum,” *SF Gate*, December 15, 2012, accessed December 13, 2013, <http://www.sfgate.com/technology/article/Zynga-struggling-to-regain-its-momentum-4120474.php>.

¹⁴ Barsh, Joanna and et. al., “Leadership and innovation,” *The McKinsey Quarterly*, 2008, accessed on December 9, 2013, http://www.gesci.org/assets/files/Knowledge%20Centre/Innovation__Execution_2008.pdf.

3. Lessons from Valve Software

Valve Software consistently releases hit titles that generate more than \$20 million in revenue—success that can be attributed to the company’s innovative and unique organization and management.¹⁵ In 2011, Valve announced that they are more profitable than either Google or Apple per employee. As a privately held company, they do not release financial information, but in 2012 independent analysis suggested the company is worth at least \$3 billion.¹⁶ This is a staggering value considering that the company has around three-hundred workers.¹⁷ This works out to roughly \$10 million in company value per employee. In comparison, consider Google that has a market value of \$354 billion¹⁸ and around 45,000 employees, which translates to about \$7.8 million in company value per employee.¹⁹ On a per employee basis, Valve is one of the most successful businesses in the world. This case study examines why Valve has become such an innovative, successful company in the past two decades in order to inform the development of better company design in other firms.

The table below highlights the most notable non-monetary company achievements for Valve over the last twenty years.

Table 1: Brief History of Valve (1996-2004)

1996	Valve Software formed in Kirkland, Washington by Gabe Newell and Mike Harrington
1996	Acquired Quake engine license from ID Software and hired two game teams.
1998	Released Half-Life, which sells over 9.3 million units
1998	Acquired TeamFortress Software Pty. Ltd. and start work on Team Fortress Classic
1999	Released Team Fortress Classic
2000	Released Counter-Strike which is hailed as the world’s premier online action game
2003	Steam is released which changes the way game content is distributed over the web
2004	Source Engine is unveiled, which allows the outside world to access some of Valve’s formerly proprietary technology

¹⁵ DeCarlo, Monica, “Valve: we’re more profitable per employee than Google, Apple,” *Tech Spot*, February 16, 2011, accessed December 8, 2013.

¹⁶ Ewalt, David, “Valve’s Gabe Newell is the Newest Video Game Billionaire,” *Forbes*, March 7, 2012, accessed December 13, 2013, <http://www.forbes.com/sites/davidewalt/2012/03/07/valve-gabe-newell-billionaire/>.

¹⁷ DeCarlo, Monica, “Valve: we’re more profitable per employee than Google, Apple,” *Tech Spot*, February 16, 2011, accessed December 8, 2013.

¹⁸ “Google,” *Yahoo Finance*, accessed December 13, 2013, <http://finance.yahoo.com/q/ks?s=goog>.

¹⁹ “Google Headcount,” *Google*, accessed December 13, 2013, <http://investor.google.com/financial/tables.html>.

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After 2004, Valve continues to release hit titles including *Half-Life 2: Episode One*, *Portal* – hailed worldwide as an instant classic, *Left 4 Dead*, *Left 4 Dead 2*, and *Portal 2*. In addition, Valve continues to make game creation and game distribution easier by improving the Source Engine and Steam. The Source Engine provides one of the most flexible, comprehensive, and powerful game development environments.²⁰ Steam allows gamers to download and play games across all they devices they own and to date has more than forty million registered users.²¹ Valve also creates Steamworks, which allows third-party developers to access the business and technical tools of the Steam platform available free of charge.²² All of these advances help to push the gaming industry forward.

The accolades, however, do little to highlight the culture that allowed Valve to turn one successful game into a string of successful games and to become one of the most profitable companies per employee today. While many things set Valve apart from other game design studios, a few tangible differences in processes and operations help to create a unique culture. As opposed to traditional gaming companies, Valve is almost completely flat in organizational structure. In addition, Valve has a unique hiring practice, time allocation practice, compensation and performance review process, and unique workspace design. The founders firmly believed that if they wanted to make great games, they needed to “create a place that was designed to foster greatness.”²³

3.1 Company Structure

The Valve organization has no hierarchy; nobody is anybody else’s designated supervisor or manager. This stems from Gabe Newell’s, Valve’s co-founder, 13-year experience at Microsoft, where he noticed that the managerial structure often institutionalized workflows too much and could stifle innovation. This experience prompted him think about what would be required to make a better system:

“When we started Valve [in 1996], we thought about what the company needed to be good at. We realized that here, our job was to create things that hadn’t existed before. Managers are good at institutionalizing procedures, but in our line of work that’s not always good. Sometimes the skills in one generation of product are irrelevant to the skills in another generation. Our

²⁰ “Source Engine,” *Valve Software*, December 10, 2013, accessed December 10, 2013, <http://source.valvesoftware.com/>.

²¹ Makuch, Eddie, “Steam crosses 40 million users,” *Game Spot*, January 6, 2012, accessed December 13, 2013, <http://www.gamespot.com/articles/steam-crosses-40-million-users/1100-6348281/>.

²² “Valve New Employee Handbook,” *Valve Software*, 2012, accessed December 10, 2013, http://newcdn.flamehaus.com/Valve_Handbook_LowRes.pdf.

²³ *Ibid.*

industry is in such technological, design, and artistic flux that we need somebody who can recognize that. It's pretty rare for someone to be in a lead role on two consecutive projects."²⁴

The outcome of this thinking is that permanent roles are not assigned at Valve. Instead, different people rise to management roles on each project organically, depending on if that person has the specific skills needed on that project. While this structure can lead to chaos, Valve hires candidates that show they can work best in a fluid structure, which allows for better idea creation.

3.2 Time Allocation

Valve grants employees complete freedom to choose what they work on. Employees allocate one hundred percent of their time to self-directed projects with the guiding maxim of selecting the project(s) that will deliver the most value to Valve and its customers. To guide this freedom they provide the following questions:

- Of all the projects currently under way, what's the most valuable thing I can be working on?
- Which project will have the highest direct impact on our customers? How much will the work I ship benefit them?
- Is Valve not doing something that it should be doing?
- What's interesting? What's rewarding? What leverages my individual strengths most?²⁵

The decision to allow employees to figure out what they should be working on to leverage their unique strengths and to deliver the most value is unique in the industry. This freedom to work on anything means the Valve employee is not bound to a specific project or a functional role; if an employee wants to create a new project, they can even recruit their own team.²⁶ While most companies have strict management practices to guide time allocation Valve has managed to create a fluid manager-less system.

3.3 Hiring Practices

Valve makes hiring the right people the company's number one priority. Since Valve lacks many of the traditional checks and balances, inherent in a more traditional hierarchical company structure, Valve leans heavily on the hiring process to weed out poor performers or people who do not fit into the company culture. Valve treats hiring very seriously, since poor hiring decisions can run unchecked for a while and may have a large negative impact. While it might be a slight

²⁴ Suddath, Claire, "Why There Are No Bosses at Valve," *Business Week*, April 27, 2012, accessed December 13, 2013, <http://www.businessweek.com/articles/2012-04-27/why-there-are-no-bosses-at-valve>.

²⁵ "Valve New Employee Handbook," *Valve Software*, 2012, accessed December 10, 2013, http://newcdn.flamehaus.com/Valve_Handbook_LowRes.pdf.

²⁶ "Valve New Employee Handbook," *Valve Software*, 2012, accessed December 10, 2013, http://newcdn.flamehaus.com/Valve_Handbook_LowRes.pdf.

hyperbole, Valve states, “hiring well is the most important thing in the universe. Nothing else comes close. It’s more important than breathing.”²⁷

The exact specifications of the Valve hiring process are not publicly available, but a few released details can help illuminate the company’s stringent hiring process. For example, Valve encourages employees to invite their friends to come work at Valve on the premise that if the employee likes the company, his or her friends will probably fit in well with the company.²⁸ There is no one who knows Valve better than Valve employees, so Valve trusts their employees to refer candidates who would be a good fit. In addition, there are some basic questions that Valve used to guide candidate search and certain types of people that Valve seeks. These questions are:

- Would I want this person to be my boss?
- Would I learn a significant amount from him or her?
- What if this person went to work for our competition?²⁹

Valve focuses on hiring people who are highly collaborative and can “deconstruct problems of the fly, and talk to others as they do so, simultaneously being inventive, iterative, creative, talkative, and reactive.”³⁰

Valve has no formal Human Resources department so the people making hiring decisions are employees. Economist-in-residence explains the hiring process at Valve: any employee can send out an email forming a search committee, the committee screens candidates via Skype before bringing the best into the office, after a potential hire leaves anyone in the office can participate in the discussion as to whether or not the potential hire should receive a job offer. A group consensus must be reached before someone can be hired.³¹ Valve, by allowing employees to directly make hiring decisions, is unique within the industry.

3.4 Stack Ranking and Compensation

Valve takes a novel approach to compensation by using a project-based stack ranking system designed to capture the full value that each and every employee brings to the company. The focus is to match an employee’s pay to the value he or she creates, as determined by his or her coworkers. In traditional compensation design, most employees received relatively fixed compensation with about ten to twenty percent of base salary coming in as bonus pay.³² This leads to situations where overpay creates resentment among peers, while underpayment

²⁷ Ibid.

²⁸ Ibid.

²⁹ “Valve New Employee Handbook,” *Valve Software*, 2012, accessed December 10, 2013, http://newcdn.flamehaus.com/Valve_Handbook_LowRes.pdf.

³⁰ Ibid.

³¹ Varoufakis, Yanis, “Varoufakis on Valve, Spontaneous Order, and the European Crisis,” *Econ Talk*, February 25, 2013, accessed December 13, 2013, http://www.econtalk.org/archives/2013/02/varoufakis_on_v.html.

³² Ibid.

demotivates and increases turnover rates. The Valve model ties value creation directly to pay to eliminate many of these underpayment or overpayment problems.

The stack ranking occurs on four different pillars: Skill Level and Technical Ability, Productivity and Output, Group Contribution, and Product Contribution. Skill Level and Technical Ability captures the difficulty (value) of the problems that an employee has the potential to solve and focuses on questions like: "Can an employee do something within the industry that no one else can?" Productivity and Output measures how much shippable content an employee gets out of the door. Group Contribution includes activities like hiring which help the organization grow as a whole. Finally, Product Contribution captures things like being a good play tester, a product visionary, or a bug finder. These are the people who spot things other people miss and help the products get out of the door on time. This system helps tie each employee's individual effort (and value creation) to the pay he or she receives at the end of the year.

The stack ranking is directly tied to compensation for each employee. There is no upper bound for end-of-the-year bonuses. In an interview with Yanis Varoufakis, economist-in-residence, he comments, "bonuses can end up being 5, 6, 10 times the level of the basic wage." In addition the payment contract is constructed, by a variety of employees, to specify an employee's base pay and the level to which the stack ranking process influences bonus pay.³³ This highlights Valve's commitment to paying employees based on how much value they create and marks a major departure from traditional industry practice.

3.5 Office Organization: Rolling Desks and Adding Value

Through Valve's unique hiring process, time allocation practice, flat company structure, and compensation process, Valve has created a culture where employees are able to guide themselves to create tremendous value. To drive this point home, Valve's physical office space highlights its unique culture: the desks have wheels, allowing employees to move their desk at any time to make themselves more valuable. Valve believes "those wheels [are] a symbolic reminder that [the employee] should always be considering where [he or she] could move" to be more valuable.³⁴ Valve is serious about its belief that its employees know how and what they should be doing to be most productive. This level of freedom for individual employees to work together in an open and collaborative environment and create value is unparalleled in the gaming industry. The whole company is shaped around the concept that employees can work together to make decisions in highly technical and creative spaces. With the right people and culture, this approach has generated tremendous returns.

³³ Varoufakis, Yanis, "Varoufakis on Valve, Spontaneous Order, and the European Crisis," *Econ Talk*, February 25, 2013, accessed December 13, 2013, http://www.econtalk.org/archives/2013/02/varoufakis_on_v.html.

³⁴ "Valve New Employee Handbook," *Valve Software*, 2012, accessed December 10, 2013, http://newcdn.flamehaus.com/Valve_Handbook_LowRes.pdf.

3.6 Risks

The Valve company design model contradicts many traditional concepts of how companies should be designed and is not flawless; sometimes employees do not like the system, sometimes Valve fails to innovate, and it is possible that this structure will not scale past 300 employees. Jeri Ellsworth, a disgruntled former Valve employee, comments on Valve's organizational structure, "one thing [she] found out the hard way is that there is actually a hidden layer of powerful management structure in the company and it felt a lot like high school. There are popular kids that have acquired power in the company, then there's the trouble makers, and everyone in between."³⁵ In addition she struggled to reach the consensus to hire new employees, as many of the "old-timers" felt the people she wanted did not fit into the Valve culture. Valve has also been forced to go back to the drawing board a few times to release truly innovative content. After a year of development their first game, Half-Life, was deemed not good enough to ship and they decided to essentially rebuild the game.³⁶ Lastly, the unique company design may reach limits in terms of scalability. It seems like at some point some more formalized structure will be needed to keep everyone organized and working towards the same goals.

4. Adopting Valve's Company Design Structure

It may be tempting to implement changes to imitate Valve's innovations in company design. It is important to note that many of the processes Valve uses only work when the culture of the company and the people within the company understand what value is and are comfortable operating without guidance. This creates a unique chicken or the egg problem where changes are needed to create a culture that fosters innovation but for the changes to work the right culture has to exist. Most companies do not have the right culture or personnel to imitate Valve. To escape this circular problem, changes to the hiring process to begin selecting the right individuals that function well in an unstructured environment would need to be made before other changes. This transition process will take time, however, the resulting lasting increases in innovation potential would make the transition worth it.

³⁵ Warr, Philippa, "Former Valve Employee: 'It Felt a Lot Like Highschool,'" *Wired*, July 9, 2013, accessed on December 13, 2013, <http://www.wired.com/gamelife/2013/07/wireduk-valve-jeri-ellsworth/>.

³⁶ "Valve New Employee Handbook," *Valve Software*, 2012, accessed December 10, 2013, http://newcdn.flamehaus.com/Valve_Handbook_LowRes.pdf.

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