**Gallatin Undergraduate Rationale**

**Jonathan Kopnick**

**Concentration: Digital Product Management & Marketing**

**Introduction**

Traditional measurements of output and value generation commonly fail or are confounded when applied to digital products. Most digital businesses operate with products that never exist tangibly. Their operation might never be seen or understood by any but a select highly-educated few. A digital product’s success might be equally tied to its adoption by users or disruption of markets in contrast to traditional gauges of success, such as how much revenue they generate. The implementation of new digital products has, and continues, to disrupt our societal, cultural, and global economic interactions because in our new digital world, knowledge and growth can spread at the speed of light. In this rationale, I hope to construct a contemporarily relevant framework for understanding how digital product management and marketing must be built on knowledge of manipulating disruptive power and communication.

**The Role Of Hacking**

The foundation of most digital products goes back to a sub-culture born out of the Chaos Computer Club, engineers at Stanford, and even earlier engineers at MIT (Levy 55, 199). Hackers “developed” technological solutions for reasons ranging from income, completing an exercise in academics, and for the very love of computers themselves. A “hacker ethic” was created with the central tenets below:

Access to computers—and anything that might teach you something about the way the world works—should be unlimited and total. Always yield to the Hands-On Imperative!

All information should be free.

Mistrust authority. Promote decentralization.

Hackers should be judged by their hacking, not by bogus criteria such as degrees, age, race, or position.

You can create art and beauty on a computer.

Computers can change your life for the better.

(Levy 28-36).

The hacker ethic not only expanded software engineering and computing to include ethical and methodological considerations, but it also created an expectation of what a culture of pure innovation for its own sake would look like.

At war with the hacker ethic is the ability to measure and increase success through financial considerations and locking in methodology. Bill Gates wrote a letter to the Chaos Computer Club illuminating the problem of a revolutionary chaos-fueled hacker ethic saying (as quoted by Steven Levy), “As the majority of hobbyists must be aware, most of you steal your software. Hardware must be paid for, but software is something to share. Who cares if the people who worked on it get paid?” (Levy 233). It goes without saying that paying for software prevailed, but the real takeaway of the rift between a product-based hacker ethic and the purist “hacker ethic” is that a hacker’s mindset is what distinguishes an innovative product manager from a business drone.

Broad innovation comes through adherence to the hacker ethic, though, eventually the bridge is made to capitalistic opportunity. At first, a company will try to maintain the culture of the hacker ethic, and successful companies will try to balance the hacker ethic with the needs of business. The hacker ethic is enticing to engineers. They are willing to take a pay cut in order to be able to practice it. Hackers/engineers supplant certain facets of their lives (social lives, appearance, relationships, money, etc.) with experience/skill/work ethic. Both talent evaluation and placement needs to be viewed through the lens of that trade-off. Most importantly, at its core, a product manager’s job is to come as close as possible to fulfilling the paradox of a business hacker ethic.

**Platform Strategy**

One of the essential ingredients in fulfilling the business hacker ethic is the ability to justify decisions of resource allocation based on what will make users want to use a platform. To do this, digital product management strategy starts with an understanding of digital platform strategy. According to the Thomas Eisenmann paper, “Platform mediated networks: definitions and core concepts,” a platform is defined as a system that “encompasses the common components and rules employed by (its) users in most of their interactions (and is) the subset of components used in common across multiple offerings in a product family” (Eisenmann 8-9). Networks can have “sides,” which distinguish between “users” and “user groups,” and, based on how sides’ preferences affect each other, there can be specific “network effects” that eventually affect users’ “propensity to participate in a network and their willingness to pay for participation” (Eisenmann 2-3). Based on the “network effects” of a platform, a product manager can “internalize externalities” and figure out appropriate subsidies and charges for users on their platform, given sides’ relationships to one another (Eisenmann 7).

The business motive of platform strategy is its ability to provide ”operational efficiencies” through lowering costs of engineering, “materials cost savings,” and by lowering “supply chain costs” by providing a central piece of architecture on which products and product families can be built (Mcgrath 66-67). Creating a platform is not just the process of building a piece of infrastructure. It is, at its nexus, a process of building and applying a pervasive strategy (called a “core strategic vision,” or CSV), which is used to guide all business identification of “new product opportunities,” “strategies and initiatives,” “product development,” “technology strategy,” and “expectations” (customer, employee, investors) from then on (Mcgrath 18-22). While theoretically -- and sometimes in practice -- a platform can be formed independently of central coordination or through gradual cooperation, in common practice, a company strategically creates and maintains a platform as the “lowest common denominator of relevant technology in a set of products or a product line,” which can be utilized over the long-term as a central tenant of a business’ operations (Mcgrath 53).

To most effectively utilize a platform, product lines built on top of the platform should be targeted at all available and viable market segments. Additionally, the scheduled release of products/product lines need to be prioritized for both company resource allocation availability, and it should be based on which segments are seen as the most profitable (Mcgrath 93-96, 119). Products need to be segmented and continually improved based on their unique ability to provide value to customers. The plan for segmenting and furthering improving products is based on the idea that each product chooses one “vector of differentiation (VOD),” that can offer consumers: “unique features,” “ease of use,” “improved productivity,” “unique fundamental capabilities,” higher-performance,” better design, more complete solutions, or better targeted costs of ownership/pricing (Mcgrath 168-179).

To be successful, each product, after picking a VOD, has to maintain its differentiation in relation to other products in the market in order to distinguish itself as unique and providing value. With nearly unlimited options in terms of creating new products and platform extensions/improvements, the question a product manager often must face is not “What should we create?...” but instead, “How, why, and in what order should I create?” Also, the product manager should consider what VOD best supports the CSV and best internalizes externalities. If internal coordination and external user management is not intimidatingly complex enough, staying one step ahead of competitors and being aware of the market make decision-making daunting.

A solution to the daunting task of setting priorities when creating a digital product is adopting a “lean” business methodology as described by its inventor, Eric Ries, as being able to, “create new products and services under conditions of extreme uncertainty” (Ries 34). The central idea underlying becoming a “lean” product manager is creating a quick and effective a “feedback-loop,” which is comprised of three central steps. The steps are: “building” a product, “measuring” data, and “learning” from that process in order to be able to quickly go back around that very loop again as soon as possible (Ries 75).

**Balancing Lean Methodologies With Risk Mitigation Factors**

Ries’ “lean” strategy is predicated on the idea that building products in small batches is more efficient than in large all-encompassing, pre-planned sets, and that focusing on small batches allows you to compete with larger, more diverse companies at a lower cost (Ries 185). Quickly creating lean products means creating “minimum viable products” (MVPs) with the barest possible functionality in order to reach a “pivot or perseverance” point when, based on evaluation, (such as split or Bayesian testing) product managers can validate or fail a MVP based on their original metric of success, which is called “innovation accounting” (Ries 8-9, 136). In the evaluation stage, “cohort analysis” can help them determine what parts of their product worked for which people and at what level of analytical effectiveness (Ries 121).

The analytics behind “lean” methodologies and marketing campaigns seek to find what is known as the “voice of the consumer” or VOC (Kaushik 9). While there are nearly infinite ways to measure and combine metrics, it is best to boil down analysis to KPIs, or key performance indicators, which summarize the success of an evaluation (Kashik 35). Further segmenting measurements of customers’ behavior to include where they came from and analyzing how many ways you got them to interact with your platform (attribution/multi-touch analysis) allows you to create a vision of how marketing efforts interact with each other and products (Kashik 357). Just as development decisions can be quickly deployed and tested for gathering insights, so, too, can digital and traditional marketing efforts. While lean methodologies and platform strategy provide ways to increase product’s successes and adoption, evaluation of a platform’s success also means looking at how sturdy it stands up to risk.

The risk in a lean-only or platform-analysis-only approach is that a digital platform or product’s KPI might satisfy many users but be too costly to survive. The solution to maintaining a pragmatic approach to lean development and platform strategy is a constant evaluation of all stakeholders’ perceptions of a given product’s “traction.” “Traction” is defined as recognized instruments of leverage at your current disposal. “Leverage” is defined as the ability to exert influence beyond what should be expected, given the amount of success or positive recognition your innovation has received in the marketplace (Shelters 1080)**.** The key to satisfying nearly all stakeholders’ perceptions of leverage is developing common “risk mitigation factors,” which insulate a platform and its products from financial strain. Examples of risk mitigation factors include establishing multiple diversified revenue streams, coming up with many applications/adaptations of core innovations, establishing barriers to entry such as intellectual property, and establishing a positive balance sheet that covers a platform and its products’ costs or burn rate (Shelters 1019-1021,1028,1041).

**Digital Platforms Are Mediums**

Another risk mitigation factor is for a product or platform to successfully encapsulate itself as a new, and sometimes definitive, medium of communication and/or exchange. Neil Postman, in Amusing Ourselves to Death, creates a solid way to understand what underlies a significantly adopted medium. Postman tells us that each new progressive medium has its own “discourse” and “definitions of intelligence,” which not only create new forms of “content,” but also are “truth-telling” (Postman 27). Every medium has its own “epistemology,” or interpretation of knowledge, that is defined by a “resonance” that adorns the “truth.” Through altering knowledge itself, “entertainment” and “public discourse” become blurred (Postman 3, 17-18).

I would argue that the success of a digital platform and the most effective barrier to entry a product manager can establish is a digital product/platform that eventually becomes a standard medium of communication. If a new medium can alter the very definition of knowledge, it can become nearly irreplaceable and thus extremely valuable. Large digital platforms such as Google and Facebook have taken over market share and distribution of knowledge, and I would thus argue that they are examples of our newest emerging mediums of communication. According to Neil Postman, media can frame the value of products and establishes the idea that the: “quality and usefulness of ... goods are subordinate to the artifice of their display” (Postman 4). Digital products truly live and die by the idea that “the medium is the message,” and it is no coincidence that central features of the most successful digital products are focused around their ability to convey novel ways of defining communication and knowledge (e.g. iPhone, keyword, Facebook, etc.).

Similar redefinition can even be traced back to power structures as ancient as the God of the Old Testament. Throughout the Bible, new/innovative forms of communication are the way that God communicates with users (worshipers), and worshipers’ actions are always monitored by God (Joseph’s dream, Jacob’s dream, burning bush, plagues, parting of the Red Sea, to name a few). In the Bible, disruption of communication and perception are what solidifies shifts in power, and those who have not adopted the new platform of religion and its values suffer (e.g. Egyptians, Babylonians, etc.) Similarly, today it is not hard to find examples of old mediums and business models negatively impacted by failing to adapt to new standards of digital communication.

While traditional ideas of media studies might look at trends over the course of decades, digital products today can be nearly instantly adopted and adapted (through content, development, and marketing) thus increasing their business value.

**The Digital Product Sublime**

The Machiavellian prince’s goal of preserving and expanding his power is shared by the product manager looking to expand the adoption and business value of a company product. The Machiavellian system of control is predicated on an assertion that men are easily controlled through both hard and soft state power in a dichotomy that he describes as “by law (and) by force” (Machiavelli 56). Part of the prince’s system of control includes maintaining influence through controlling perception of morality, and by proxy, his people’s will. Machiavelli says that a prince must be “prudent” in practicing “evil,” while “escaping” its “reputation,” and he creates a framework for dehumanizing men and controlling them. Machiavelli describes mankind as a tamable, “simple” collective of “wretched beasts” who are “ready to be deceived” by a prince prepared to act like both a sly “fox” and an intimidating “lion” (Machiavelli 57).

Platforms such as Facebook and Google’s rapid changes have evoked worldwide controversy with users who claim that even minute changes have had dehumanizing effects similar to those the Machiavellian fox and lion created.

Creating consistent values for how users interact with a digital product is essential in maintaining consistency between a product team’s internal thinking and their platform’s core strategic vision and its users’ perception of its utility and their trust in that utility. The most successful companies create their own guiding ethical rules on top of their internal strategy. Google’s moral code rests on the idea of “Don’t be evil.”

Yet Google’s idea of evil is unique to its core purpose of providing a way to search the web. Google’s own definition of evil itself is anything which halts “computational progress,” and provides “engineering impediment” to solving their mission of organizing the web (Bogost). Google does not just direct its morality entirely towards efficiency, but it redefines conventional views of morality itself to narrowly include only technical problems and not traditional ethical ones.

What Google and any product manager with a successful digital product must realize is that the fear of their power is based on how their technology is innately perceived as “sublime.” According to Kant:

The feeling of the Sublime is therefore a feeling of pain, arising from the want of accordance between the aesthetical estimation of magnitude formed by the Imagination and the estimation of the same formed by reason” (72).

A user who fears the complexity, scale, and scope of a product won’t give their information as readily, won’t complete actions as easily, and won’t be nearly as predictable in their behavior. The digital product sublime is essential to understanding how a product manager must not just manages user’s behavior but also perception.

The digital product sublime does not just intimidate users as passive observers. There is also a personal element which product managers have to deal with when evaluating how users regard their products. As described by Joshua Foer in his study of memory called “Walking with Einstein,” at the beginning of human history, memory itself was considered to be the “root of all culture” (Foer 22). We have slowly transitioned from, as he describes, us having our “own natural memory” to having “a vast superstructure of external memory aids.” In what he describes as the “externalization of memory,” Foer describes how outsourcing our memory to mediums such as the printing press has given us a sublime fear of “waking up tomorrow and discovering that all the world’s ink ha(s) become invisible and all our bytes ha(ve) disappeared” (Foer 22-23). Properly addressing the personal aspects of the digital product sublime means users are willing to trust you with holding their precious memory and all that goes with it.

In reaction to the sublime, a product manager must also have a consumer-facing set of not just ethics, but definitions of truth to clarify users’ tendency to fear complex technology. From a marketing perspective, every product has its own truth. If, as Neil Postman says, “the medium is the message,” a digital product is responsible just as much for creating or communicating how it changes “the message” as it is for creating its method.

**Combatting The Digital Product Sublime**

In his discourse, Descartes lays out what should be a maxim of any product manager: “(I) devote(d) my whole life to cultivating my reason and advancing as far as I could in the knowledge of the truth, following my self-imposed method,” (Descartes 12). A Descartean Cartesian product manager focuses not only on improving his digital product’s internal truth, not on the wider societal, moral implications created by its eventual success. Descartes says that to focus on method is to worry about yourself instead of things outside of your control. He says to try to change yourself instead of the world, and he believes it is most important is to focus on your personal “occupation” (Descartes 2, 13).

Focusing on communicating a product’s method effectively encourages users to behave rationally. Rational behavior by users not only allows for predicting their behavior, but it allows MVP and analytical testing to provide more valid results for data-driven decision making. Every user is susceptible to “prospect theory,” or actions that “deviate from the … rationality assumption in traditional economics” (Kahnemen 14). Reactions to the sublime by users must therefore be countered through influencing users’ “heuristics” or their “predictable biases (systematic errors)” in judgment and predictions (Kahnemen 7). Catering to the two systems of the brain, a product manager can enlist influential psychological tactics such as “priming,” “anchoring,” “framing,” and “substitution” in order to get users to behave as they should by using the predictability of irrationality to their advantage (Kahnemen 88, 97, 126-128).

Users can self-correct and encourage useful behavior themselves. Three major sublime issues that product manager’s deal with are “cognition (how do you suggest the right things to the right users?),” “coordination (what is the most effective and efficient way to get a user from point A to point B?),” and “cooperation” (under which circumstances are users best brought together?) problems amongst the users of their platform. A product manager can also allow the sublime to be combated through the “wisdom of crowds” (statistically predictable rationality of group decision making), and they can place the burden of solving heuristics on users’ themselves (Surowiecki 132).

Medieval religion and magic are a model for a digital product’s role in a person’s life. As described by Robert Scribner:

It was in the functional aspect of medieval religion that the line between religion and magic could become blurred. Religion functioned as a means of order in daily life because it was predicated on the assumption that all creation depended for its well-being on the sustaining power of the divine. Irregularities and discontinuities in the material world were understood either as a form of breakdown of this cosmic order or as a result of sacred power operating upon the world (Scribner 477-478).

All kinds of digital “magic” go into every click on a major platform. The ability to properly correlate the conception of one click with a billion-line database being used as the foundation for a thousand-line, machine-learning script fails to register with most people. The list of breakdowns in a technological cosmological order is nearly endless, spanning technology breaks, users misunderstanding interfaces, and even outages in hosting. The ethical framework and strategic vision behind the platform is its religion, and that is what allows the gaps in reasoning between users and engineers to continue to hold and to be trusted.

**Conclusion**

A digital product manager is faced with a daunting set of challenges ranging from managing data and exercising theory-driven decision making to constructing a near-religion around a platform. Yet, in summary, it is not a contemporary icon like Steve Jobs who properly encapsulates the digital product manager’s struggle, but instead a classical great named Boethius. In his Consolation of Philosophy, Boethius tells us that:

“the best way of controlling the universe is if the simplicity immanent in the divine mind produces an unchanging order of causes to govern by its own incommutability everything that is subject to change, and that will otherwise fluctuate at random,” (Boethius 1886).

While the road to a successful digital product is paved with near infinite minutia and complexity, the challenge is not in harnessing more complexity, but in creating systems that can reduce complexity to achieve simplicity. If only that was as easily said as done.

**Book List:**

**Area of Concentration**

Bogost, Ian. "What Is 'Evil' to Google?" *The Atlantic*. Atlantic Media Company, 15 Oct. 2013. Web. 29 May 2014.

Eisenmann, Thomas. "Platform mediated networks: definitions and core concepts." *Harvard*

*Business School-Module Note* (2007).

Gates, B. (1976) Open Letter to Hobbyists. Homebrew Club Newsletter Vol 2, Issue 1

Kaushik, Avinash. *Web Analytics 2.0: The Art of Online Accountability & Science of Customer*

*Centricity*. Indianapolis, IN: Wiley, 2010. Print.

MacKenzie, I. Scott. *Human-computer interaction: An empirical research perspective*.

Newnes, 2012.

McGrath, Michael E. *Product Strategy for High Technology Companies: Accelerating Your*

*Business to Web Speed*. New York: McGraw-Hill, 2001. Print.

Ries, Eric. *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to*

*Create Radically Successful Businesses*. New York: Crown Business, 2011. Kindle.

Shelters, David. *Start-up Guide for the Technopreneur: Financial Planning, Decision Making*

*and Negotiating from Incubation to Exit*. Hoboken, NJ: Wiley, 2013. Kindle.

**Modernity-The Social and Natural Sciences**

Friedman, Thomas L. *The World Is Flat: A Brief History of the Twenty-first Century*. New York:

Picador/Farrar, Straus and Giroux, 2007. Print.

Foer, Joshua. *Moonwalking with Einstein: The Art and Science of Remembering Everything*.

New York: Penguin, 2011. Penguin Ebook.

Kahneman, Daniel. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux, 2011.

Kindle.

Surowiecki, James. *The Wisdom of Crowds*. New York: Doubleday, 2003. Kindle.

**Modernity-The Humanities**

Kant, Immanuel, and J. H. Bernard. *Critique of Judgement*. New York: Cosmo Classics, 2007.

Print.

Levy, Steven. *Hackers: Heroes of The Computer Revolution*. Sebastopol: O'Reilly, 2010.

Print.

Postman, Neil. *Amusing Ourselves to Death: Public Discourse in the Age of Show Business*.

N.p.: Penguin USA, 2006. Print.

Scribner, Robert W. "The Reformation, Popular Magic, and the "Disenchantment of the

World"" *Journal of Interdisciplinary History* 23.3 (1993): 475. *JSTOR*. Web. 24 Aug. 2014. <<http://www.jstor.org/stable/206099>>.

**Ancient, Medieval, and Renaissance Classics**

Alighieri, Dante, Allen Mandelbaum, and Barry Moser. *Inferno: A Verse Translation*. New

York: Bantam, 1982. Print.

Boethius, and V. E. Watts. *The Consolation of Philosophy*. London: Penguin, 1999. Kindle.

Descartes, R. 1637. *Discourse on the Method of Rightly Conducting One’s Reason and*

*Seeking Truth in the Sciences,* trans. Bennett, J. 2007. [www.earlymoderntexts.com](http://www.earlymoderntexts.com) (http://www.earlymoderntexts.com/pdfs/descartes1637.pdf)

Kramer, Heinrich, and James Sprenger. "The Malleus Maleficarum." *The Malleus Maleficarum*

*Online Edition*. Trans. Montague Summers, Wicasta Lovelace, and Christie Jury.

Windhaven Network, n.d. Web. 24 Aug. 2014. <http://www.malleusmaleficarum.org/>.

Kohlenberger, John R. *The Essential Evangelical Parallel Bible: New King James Version,*

*English Standard Version, New Living Translation, the Message*. New York: Oxford

UP, 2004. Print.

Machiavelli, Niccolò, and George Bull. *The Prince*. London: Penguin, 2003. Print.

More, Thomas. *Utopia*. Mineola, NY: Dover Publications, 1997. Print