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THE EARLY CHURCH AS A MODEL FOR INNOVATION

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## **ABSTRACT**

Christensen's model of disruptive innovation is deservedly popular. This model can be applied to a non-profit and its innovations similarly to the way the theory is applied to for-profit companies in Christensen's examples. The Church has been at the forefront of innovation multiple times in its history, and it fits Christensen's model for some of its innovations. It has also been disrupted by others following Christensen's model.

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*Totus Tuus, Maria.*

## Chapter 1

### **Introduction to the Thesis – *The Early Church as a Model for Innovation***

The goal of a thesis is to provide new knowledge about a field - the knowledge is useless for you if you can't understand it because I have obscured it with big words and seemingly complex reasoning or technical jargon. So, my goal for you is to present this entire discussion as plainly as if we were sitting together talking about it. I know this is an academic thesis, but that doesn't mean that it needs to be painful for you to read.

To be clear - my area of study is innovation. My area of interest is the Church; I particularly enjoy studying the history and philosophy of the Roman Catholic Church. Most people don't link the concepts of innovation and the Church together, but some have. In fact, I found a couple examples of people who have written about this topic before, and I'm going to give you some insight into their work as we talk.

Before we dive in and discuss the early Church as a model of innovation, we have some ground work to do. It is necessary that I explain what I mean by "the Church," and especially the "early Church." Of course, I suppose that it would be amiss if I did not explain what innovation is. The stated purpose of this paper is to contribute new knowledge to the field of innovation. I added a goal for myself, as well. My personal goal is to thoroughly explain for you why I see the early Church as a model for innovation.

### **Introduction in two parts – What “on Earth” is The Church?**

What is the Church? What is the early Church? Great questions. Let's talk about them. I already mentioned that I have a particular fascination with the Catholic Church. Part of the reason I am so fascinated by it is that it has a very strongly documented set of beliefs.



It uses what is called a dogmatic theology - "the science concerning God" (Theology | Catholic Answers - 1.1.1). The theologians of the Church - the people who study this science - study the "subject matter of the deposit of faith" which is "found in the Catechism" (Theology | Catholic Answers - 1.1.3). The deposit of faith simply refers to what the Catholic Church says is true based on Scripture and Tradition (Definition of DEPOSIT OF FAITH). The Catechism of the Catholic Church<sup>1</sup> is just a summary of those truths (Definition of CATECHISM).

So, to look for answers about the Church, let's look to what the Church says about itself. And the clearest, shortest answers for what the Church says about anything, including itself, will be found in its Catechism. In paragraph 781, the CCC says:

*"At all times and in every race, anyone who fears God and does what is right has been acceptable to him. He has, however, willed to make men holy and save them, not as individuals without any bond or link between them, but rather to make them into a people who might acknowledge him and serve him in holiness. He therefore chose the Israelite race to be his own people and established a covenant with it. He gradually instructed this people. . . All these things, however, happened as a preparation for and figure of that new and perfect covenant which was to be ratified in Christ . . . the New Covenant in his blood; he called together a race made up of Jews and Gentiles which would be one, not according to the flesh, but in the Spirit."*

So, the Church is a group<sup>2</sup> of people united in spirit<sup>3</sup> who serve God<sup>4</sup>. The Church has four distinct characteristics. It is "one," it is "holy," it is "catholic," and it is "apostolic." "One" means that the Church has one set of beliefs and is manifested in only one group of believers - not several different sets of beliefs. "Holy" means that the Church was established by God. "Catholic" means the Church is for every person - anybody can belong to the Church, not just some people. "Apostolic" means that the Church maintains a structure from its foundation through all time – a foundation based on the original apostles of Christ and passed on to the bishops through time (Catechism...apostolic).

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<sup>1</sup> CCC

<sup>2</sup> "Race"

<sup>3</sup> "one...in the Spirit"

<sup>4</sup> "...a people who might acknowledge him and serve him..."

When I discuss the Church, I am discussing an organization that meets the aforementioned definition and has the above four characteristics.

This leaves us with one more definition to understand on the Church side of things before we dive into our examples. What do I mean by the early Church? By the early Church, I mean the very earliest group of people who are the Church as defined above. They were alive at and immediately following the time of Christ<sup>5</sup> and the next few generations of students following them<sup>6</sup>. This time period would typically be called the apostolic age<sup>7</sup> through the patristic period<sup>8</sup> (McGrath, Chapter 1).

### **Introduction in two parts – But really, what is Innovation?**

What is innovation? Isn't that just a popular buzz word? Great questions. Let's talk about them. I already told you that my field of study is innovation. In particular, I am studying Corporate Innovation and Entrepreneurship. Innovation is newness. That's it. Anything new - an idea, a product, a method - that's all innovation (Definition of INNOVATION).

Innovation is an academic field of study. The field studies what leads to innovation. Where do creative ideas come from? How do people take creative ideas and turn them into new "things?" How do those people turn their new objects or ideas into money? These questions all have answers that have been thought about, written about, discussed, and shared with the world.

At the time I was doing this research, a Google search for "innovation" turned up 2.8 billion results. A Google search for "innovation theory" turned up 442 million results. There were results from Harvard Business Review, the National Institutes of Health, Boston University, The New Yorker,

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<sup>5</sup> AD 0-33

<sup>6</sup> until approximately 500 AD

<sup>7</sup> because the original apostles were alive

<sup>8</sup> because of the people known as the patriarchs

Smithsonian.com, Stanford and more. These sources aren't just buzzwords popping up on the internet - these are hard-hitting intellectuals with skin in the game.

All these people are sharing their ideas about newness. The people who are writing from the same perspective that I am – the scholars in the business field – are writing *specifically* about how to turn new ideas into money. There's one theory that stands above the rest. It dominated my time at Penn State and has caused new fields of research in the business world. It sparked a massive change in Google Trends. The theory is called Disruptive Innovation. It sounds simple. It sounds like an innovation that changes something or introduces a new technology. Both are true, but neither is the whole. Disruptive innovation is what I'll be talking about in this paper – it's the model of innovation that I will be applying to the Church.

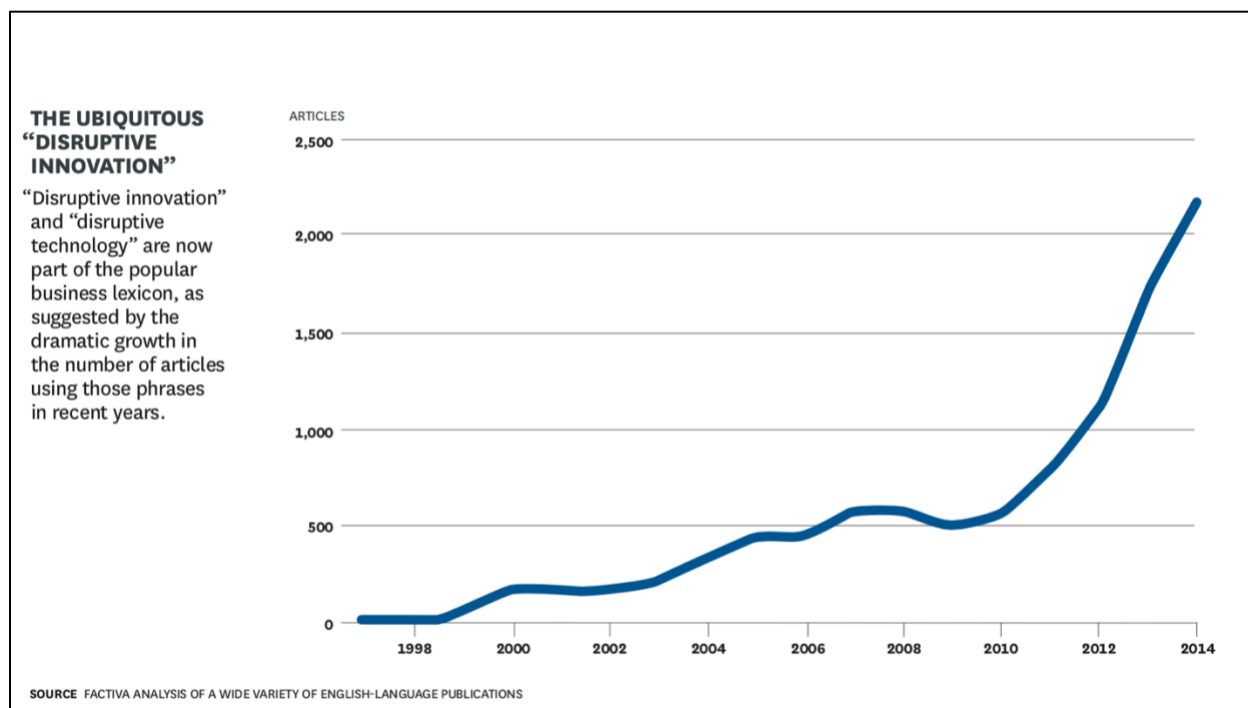


Figure 1: Google Trends for Disruption

## Chapter 2

### Disruptive Innovation

One of the currently most popular topics in the field of innovation is the idea of “Disruptive Innovation.” This idea was pioneered in 1995 by a Harvard professor named Clayton Christensen. He may be one of the hardest-hitting of the hard-hitting intellectuals I mentioned. That doesn't make him right automatically, but we'll get to that, despite what some insistent writers in *The New Yorker* might claim<sup>9</sup> (Lepore).

Clayton Christensen wrote an article with Joseph Bower entitled *Disruptive Technologies: Catching the Wave*. They showed that they had discovered a pattern in recent technologies and companies related to innovation; what they had discovered was very complex. It took ten pages in the Jan-Feb 1995 issue of the *Harvard Business Review* just to introduce their new theory.

#### Disruptive Innovation According to Robert Badman

Disruptive innovation is a confusing phrase, especially considering the common usage of the word disruption. It is apparent that disruption frequently occurs in many industries. For example, the taxi industry was disrupted by Uber, but that doesn't mean that disruptive innovation is frequently occurring. There is a select set of circumstances that a technology has to meet for it to be a disruptive innovation. Most importantly, the technology must be new. If I create a wooden table with four legs, that obviously isn't a disruptive innovation – wooden tables with four legs have existed for a very long time. This circumstance is pretty intuitive.

The rest of the theory is based on how we can predict the success of innovations. Disruptive innovation is a predictive model. It's not perfect, but it helps identify factors that make certain

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<sup>9</sup> Which I discuss more in Appendix A

innovations more likely to succeed than others. An important and interesting component of the theory is where in the industry an innovation should occur in order for it to be considered disruptive. Intuitively, we would guess that a “disruptive” innovation would occur on the high end of an industry because we tend to think of innovations as flashy and from big companies<sup>10</sup>. This is not the case, though. In order to find a disruptive innovation, we need to seek out a technology that follows a specific performance path – it slowly surpasses an older technology that is nearing the end of its life cycle. For this to be true, a disruptive innovation necessarily must, at some point, be lower on the performance curve than the incumbent technology<sup>11</sup>. All that means is that a new technology, if it is on the path to disruptive innovation, must start out in a market where it doesn’t have all the benefits and performance options as the existing resources.

The final step for a true disruptive innovation is that it needs to get better than an incumbent technology. More specifically, it means that the new technology needs to be on a path to achieve better performance than the incumbent. This does *not* mean that a disruptive innovation needs to succeed. I think this is a part of Christensen’s theory that doesn’t get enough attention<sup>12</sup>. Not every idea that fits the model will necessarily succeed, but the model *assists* us in predicting success. This means that if a new technology isn’t improving at a rate greater than that of the incumbent technology, it is not and will not be a disruptive innovation. This is just intuitively true because there would be no reason to switch to a new technology if it will never be better than an old technology.

So, to find an innovation that will likely be disrupted, we should look for a *new* technology that starts out with low performance and eventually gets better than the incumbent option.

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<sup>10</sup> iPhone, ultrabook laptops, tablet computers, Post-It notes, etc.

<sup>11</sup> We’ll discuss this more later in this chapter

<sup>12</sup> See Appendix A for more information.

## Disruptive Innovation According to Christensen

Before I explain disruptive innovation based on my research, I want to give you two quotes from Christensen himself that explain a couple of the pitfalls I'm going to avoid while talking to you. The first quote is from an article, *What is Disruptive Innovation*, in the Harvard Business Review from 2015, twenty years after they introduced disruptive innovation to the world. This quote basically explains why he needed to publish a paper like *What is Disruptive Innovation* in the first place.

*"There's another troubling concern: In our experience, too many people who speak of 'disruption' have not read a serious book or article on the subject. Too frequently, they use the term loosely to invoke the concept of innovation in support of whatever it is they wish to do. Many researchers, writers, and consultants use 'disruptive innovation' to describe any situation in which an industry is shaken up and previously successful incumbents stumble. But that's much too broad a usage." – Christensen, What is Disruptive Innovation?*

What I am presenting to you is not about something I want to be a disruption. I am not looking for permission to greenlight a project or spend money or try a new idea like the people Christensen speaks about in his quote. As a scholar, I want to discuss and prove some cases about disruptive innovation based on the same subject<sup>13</sup>. These cases may be a little too progressive to discuss in a typical academic paper subject to peer review. I am not going to try to smash a square peg into a round hole by ignoring the research on this academic topic – that happens far too much when people try to discuss the theory of disruptive innovation.

This second quote is a *quick* summary of disruptive innovation from the same paper, *What is Disruptive Innovation*? I am including this not because it's a complete picture of what I mean by disruptive innovation, but because the master of the field can present a better one-paragraph summary of his own topic than I can.

*"First, a quick recap of the idea: 'Disruption' describes a process whereby a smaller company with fewer resources is able to successfully challenge*

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<sup>13</sup> The subject of the Church as innovator or incumbent

*established incumbent businesses. Specifically, as incumbents focus on improving their products and services for their most demanding (and usually most profitable) customers, they exceed the needs of some segments and ignore the needs of others. Entrants that prove disruptive begin by successfully targeting those overlooked segments, gaining a foothold by delivering more-suitable functionality— frequently at a lower price. Incumbents, chasing higher profitability in more-demanding segments, tend not to respond vigorously. Entrants then move upmarket, delivering the performance that incumbents’ mainstream customers require, while preserving the advantages that drove their early success. When mainstream customers start adopting the entrants’ offerings in volume, disruption has occurred. – Christensen, What is Disruptive Innovation?*

Before we continue with my description of disruptive innovation, let’s note two things that are very interesting and probably a bit too obscure<sup>14</sup> from this quote. “Entrants that prove disruptive” is referring to only *successful* companies that also follow the pattern of *disruption*. Christensen intentionally limits the companies he is talking about because of a common criticism of his work<sup>15</sup>. The second principle I want to highlight is present at the beginning and end of the quotation. “ ‘Disruption’ describes a process.” Then, “Disruption has occurred.” Imagine a still photo of a baseball player hitting a ball. We can’t tell whether he hits it fair or foul based on that picture. Maybe we can make a best guess based on the location of the bat relative to the ball, but we wouldn’t know until we see where the ball goes. In the same way, a snapshot of any particular company at one moment won’t tell us if it was disruptive or not. Maybe we can make a best guess based on the new technology relative to the old technology, but there won’t be a definitive conclusion on the state of its disruption until we see where it goes.

### S-curves

Christensen and Bower divided new technologies into two different groups: sustaining innovations and disruptive innovations. With technology, there is a concept called an “S-curve,” which is

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<sup>14</sup> To be fair, he tried to give us 20 years of research in one paragraph, so it’s not *really* too obscure.

<sup>15</sup> See Appendix A

shown below. When a technology is newly introduced, it falls fairly low on a performance curve. As the technology ages, it increases in performance<sup>16</sup> rapidly over time. Finally, as a technology nears the end of its life, improvements to it become more expensive and less frequent as researchers reach the limits of the technology on an S-curve. This means the rate of improvement slows down and eventually bottoms out. This creates a curve that looks just enough like an “S” for us to call it an S-curve. Any innovation that results in movement on the S-curve is a sustaining innovation.

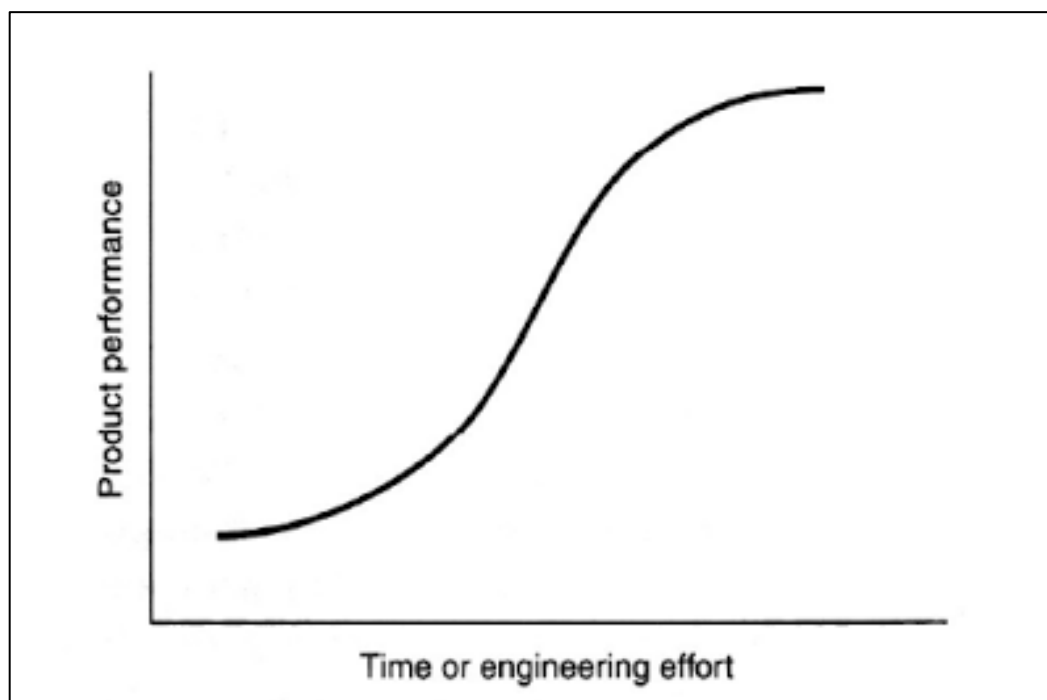


Figure 2: S-curve

Disruptive innovations, on the other hand, create a new S-curve. In a disruptive innovation, the entry point on this new S-curve must be lower than the end point on the old S-curve. See the image below for an illustration.

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<sup>16</sup> Christensen's example is hard drive storage space. This is particularly interesting to us now (in 2019) because storage space isn't the metric by which we grade hard drives anymore. Every hard drive has enough space for a standard user; the question switches to "is it fast enough" for a standard user?



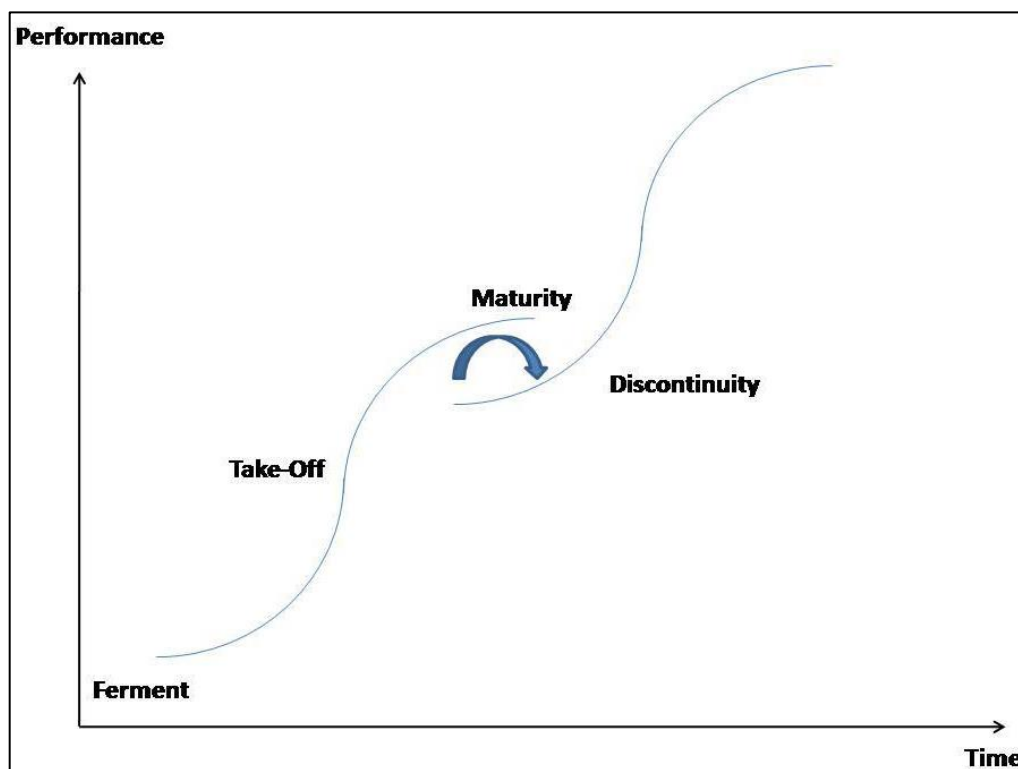


Figure 3: S-curves in disruptive innovation

### Not Creative Destruction

You may be familiar with an economic theory named “creative destruction,” named by Joseph Schumpeter. Creative destruction postulates that there is a “process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one” (Kenton). While the theory of disruptive innovation may fit with the concept of creative destruction<sup>17</sup>, they are different, and we’ll be discussing disruptive innovation exclusively. I only mention creative destruction so we don’t get confused later<sup>18</sup>.

<sup>17</sup> Christensen does note that creative destruction may be an early attempt to describe disruptive innovation

<sup>18</sup> The two topics, despite their differences, are frequently confused

## Performance Attributes

Another hallmark of a disruptive innovation is that it has a different package of performance attributes than the incumbent technology. This results in the new technology having a lower current performance than an incumbent technology. But let's remember that disruption is a process, so the new technology is only lower on a performance curve than the incumbent technology *when it is introduced*. As the new technology ages and moves along its S-curve, its performance increases so quickly that it can soon be used as a replacement for the incumbent technology *if it is a real disruption*. There are many new technologies that never catch up to the performance of an incumbent technology. These are not all disruptive simply because they do different things. They only become disruptive when they “catch up” and replace the incumbent technologies.

## Hard Drives

The figure below is Christensen's primary example in his original publication from 1995.

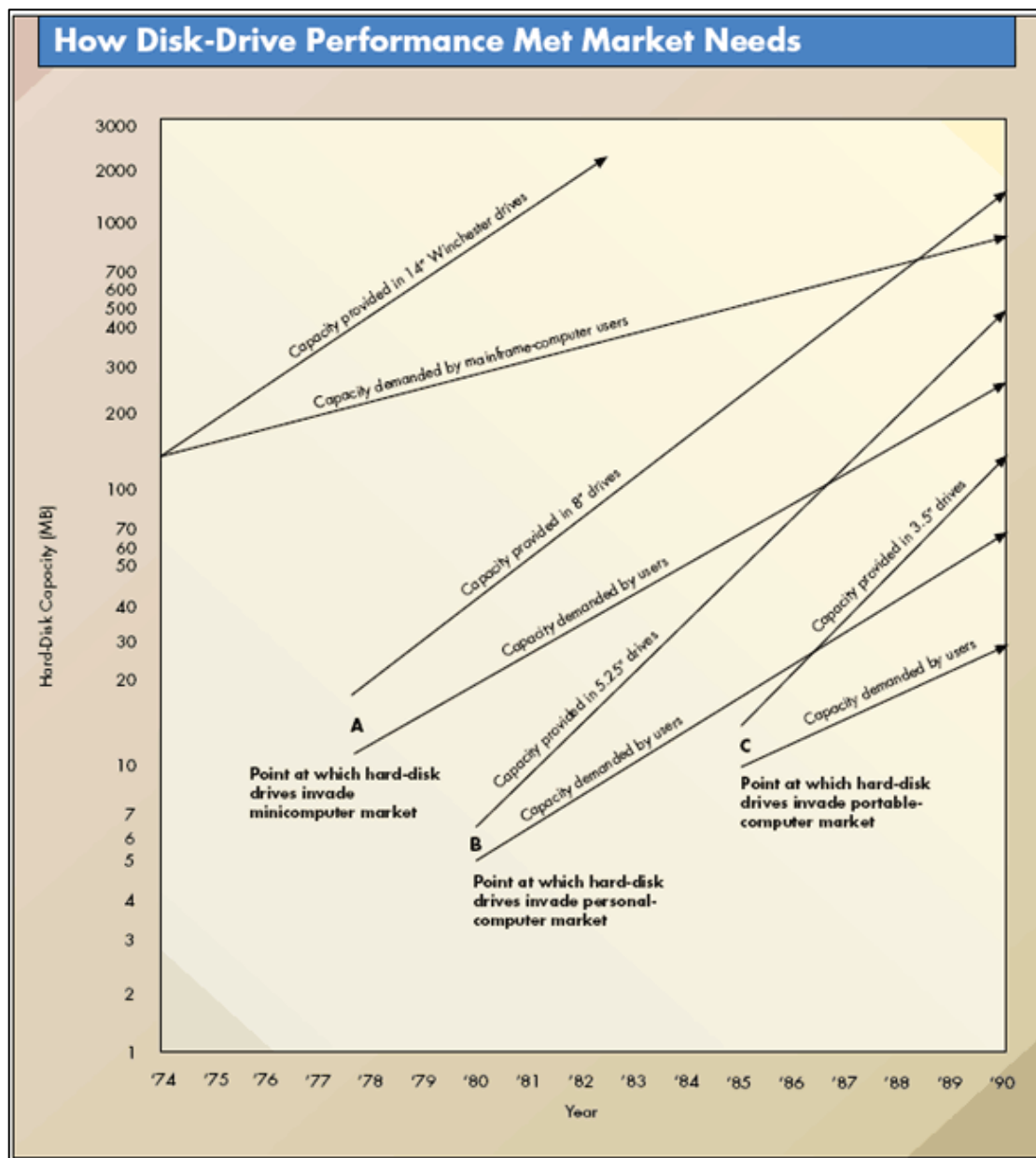


Figure 4: Christensen's Original Example

I like this particular figure because it uses quantifiable data – megabytes and years. Most illustrations of disruptive illustration are rough sketches that explain the concept, but this is an actual graph that shows how technologies progress. It is also amazingly clear about the entry points of the new technologies. Unless you are already an expert in the history of the hard drives, I'll lay out the order in which the technologies advanced.

First, we had 14” drives. We also had mainframe computers. Then we had 8” drives. Then 5.25” drives, then 3.5” drives. All three new technologies increased their capacity at a rate faster than the previous technology. So in 1988, 8” drives had enough capacity to satisfy the demand of mainframe computers. In 1986, 5.25” drives had enough capacity to satisfy the needs of the minicomputer market. In 1987, 3.5” drives had enough capacity to satisfy the needs of the personal computer market. By the time portable computers are introduced to the market, all hard disk drive sizes meet the needs for the portable computers in terms of capacity; however, there are other clear benefits to the smaller hard disk sizes. For example, most portable computers<sup>19</sup> are smaller than 14” now. I typed this paper on a computer that is smaller<sup>20</sup> than the hard drives we’re talking about<sup>21</sup>. The different computer sizes also had different storage requirements. Obviously, mainframe computers required more storage space than minicomputers, which required more storage space than personal computers, which required more space than portable computers<sup>22</sup>.

### **Where to look in the market for Disruptive Innovations**

Most companies tend to move upmarket to sell their products. This means that they move to customers who will pay higher prices for better goods. For example, customers willing to pay more for a juicy, fresh burger instead of a frozen fast-food burger are upmarket<sup>23 24</sup>. The same is true of the hard

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<sup>19</sup> In 2019, anyway, but the technology we have now represents developments based on the technology of portable computers from 1985.

<sup>20</sup> In form factor

<sup>21</sup> As a matter of interesting facts, the hard drive on my computer is also about 100 times larger in capacity than the largest hard drives in Christensen’s graph.

<sup>22</sup> To avoid any ambiguity, these requirements are coming from users’ demands, not physical requirements of the computers themselves. Mainframe computer users had to store much more data than personal computer users. Typing a single text document on a PC uses less computer data space than designing and running codes and storing the massive number of data points on a mainframe.

<sup>23</sup> Imagine a McDonald’s quarter pounder burger compared to its \$1 cheeseburger. It isn’t that we’re comparing two different restaurants, just two different customers of the “same” product from the same place— a burger.

<sup>24</sup> This is not to say that a fresh burger is a disruptive innovation.

drive market that Christensen used as his example – customers were willing to pay more for higher-capacity hard drives. As a result, most companies tend to focus on improving products for their current customers. Even<sup>25</sup> already-existing customers are willing to pay more for better services.

It would be a poor choice for a company to move downmarket with their goods. Think about baseball bats. People are willing to pay for bats that don't break. A company wouldn't start producing a baseball bat that is more likely to break than their current baseball bat. Theoretically, customers would be willing to pay for that bat because it's still a baseball bat, but it isn't a move upmarket. Customers wouldn't pay more, so the low-profit margin of a more breakable bat would be a poor management decision.

Disruptive innovations enter the market on the low end. The new products don't even meet the current customer demand for performance when they are introduced. As they move up the technology curve<sup>26</sup>, they eventually catch up to the performance of the incumbent technology and meet consumer demand for performance<sup>27</sup>. They necessarily move upmarket. But when evaluating an innovation, don't look for a new idea that is coming in as high as an incumbent on the performance curve – that innovation is not on the path to disruption innovation. It may be disruptive to an industry, but it does *not* fit the model of disruptive innovation.

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<sup>25</sup> And perhaps especially

<sup>26</sup> S-curves

<sup>27</sup> Usually at a lower price point than the incumbent technology

## Chapter 3

### Companies and Customers as Innovation Evaluators

There are four important aspects of evaluating innovations for companies and consumers. *First*, high-end customers are good at evaluating sustaining innovations. *Second*, companies tend to starve disruptive innovations of funding because they don't satisfy current customers. *Third*, established players only enter new markets after they are established. *Fourth*, companies should not focus on disruptive innovations with their main profit-making divisions.

#### High-end Customers as Evaluators

High-end customers are good at evaluating sustaining innovations. Customers who sit on the high end of the market are willing to pay more money for goods and services that perform well. In our disk drive example, high-end customers are willing to pay more for drives that satisfy capacity requirements. In our baseball bat example, high-end customers are willing to pay more for bats that don't break. When a new option enters the market, high-end users tend to recognize the sustaining innovations. They are willing to pay more for a technology that is closer to their needs. A truly disruptive innovation will not satisfy the needs of a high-end customer when it enters the market.

Below, I included the chart from Christensen's 2015 paper on the topic, *What is Disruptive Innovation?* It demonstrates the flow of new entrants in the market compared to sustaining innovations and the market demands. The high-end customers don't need to adopt an innovation for it to be disruptive, but typically a disruptive innovation will eventually satisfy the needs of even the most high-end customers. As an incumbent nears the end of its S-curve, its performance will be higher than even the most high-end users' needs demand. An example is Microsoft Word, a huge incumbent in the word processing software market. Its features now are more substantial than any single user, even the most advanced user, requires.

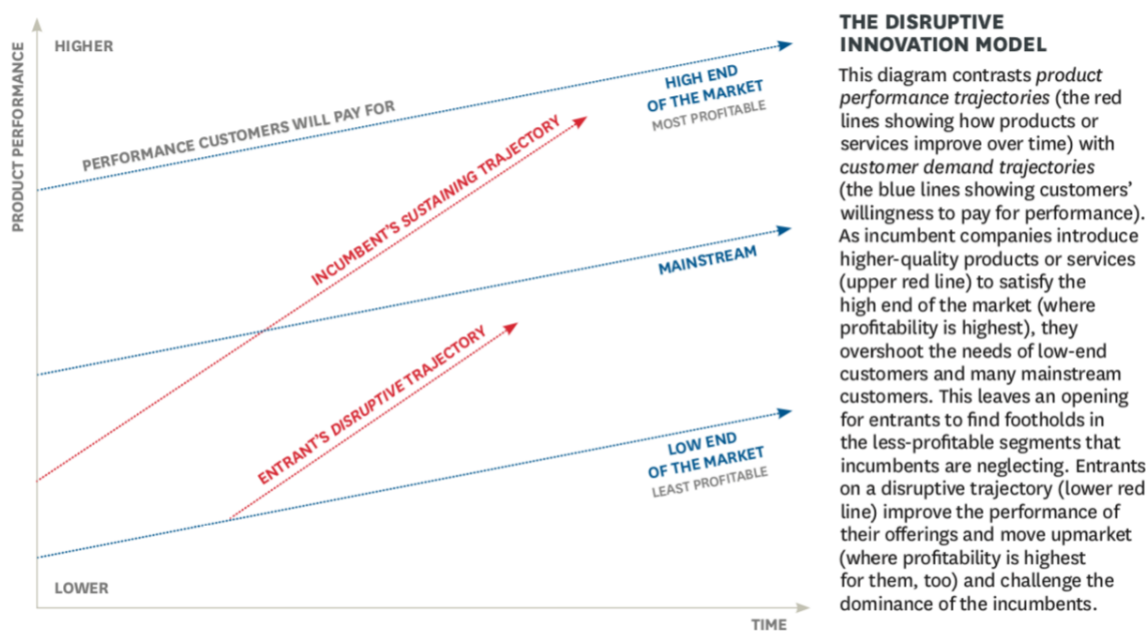


Figure 5: Christensen's Updated Chart

An important note for the theory of disruptive innovation is that high-end customers don't do a great job predicting disruptive innovations. They have no use for an innovation that doesn't satisfy their immediate needs. Any company purchasing new innovations still has customers to satisfy, so they can't afford a major drop off in performance all of a sudden just because a new innovation exists<sup>28</sup>.

### Starving for Funding

Companies are often oblivious to disruptive innovations that don't satisfy the needs of their existing customers. Logical decision-making mandates satisfying the current and potential *existing* customers. As managers and companies satisfy the needs of their current and target customers, they don't fund innovations that aren't in line with their goals. This creates a situation where new innovations that

<sup>28</sup> We will discuss this later, but early adopters tend to be early individuals interested in technology or lower-end customers whose demands aren't as high on the performance curve as the high-end customers.

are potential useful<sup>29</sup> aren't funded because they don't work the way they are immediately needed. These are the right decisions for old circumstances. Given a new innovation on a disruptive path, the decisions are wrong because there are new circumstances; managers are just blind to the situation.

### **Entering New Markets**

New markets are hard to find. Incumbent companies like to sell to customers they know exist. A hypothetical customer is hard to sell to and sometimes may not even exist outside the imagination. Disruptive innovators<sup>30</sup> must invent market information. There are, according to Christensen, only two ways to discover information about a new market that has never existed before. First, the market must be changed rapidly and iteratively. If we have a product we know will sell exclusively to women, we should target the sales to women. As we pursue better sales numbers, we may change from teenage women to young adult women to middle age women to elderly women. The target market will have to change rapidly<sup>31</sup>. The second method of discovering new information is changing the product rapidly and iteratively. If we have a product that is selling fairly well, we can make small changes<sup>32</sup> so that it appeals to more people in the market.

### **Want profits? Make a spin-off**

In order to protect disruptive innovations, companies *must* work to get funding and support assigned to new ideas that might seem like they have no applications. This must be done carefully. A

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<sup>29</sup> And sometimes are immediately profitable!

<sup>30</sup> And incumbent companies, when required

<sup>31</sup> But not randomly

<sup>32</sup> Also known as sustaining innovations



company should only choose to support new innovations<sup>33</sup> if they are on the disruptive path. Here is what Christensen says about protecting the disruptive innovations:

*“Place responsibility for building a disruptive technology business in an independent organization ... creating a separate organization is necessary only when the disruptive technology has a lower profit margin than the mainstream business and must serve the unique needs of a new set of customers...” – Christensen, “What is Disruptive Innovation?”*

Because disruptive innovations take hold in new markets or at the low-end of the market, profits for the new innovation are likely to be lower than a cash cow for a company. As such, it is necessary to keep new ideas from being killed off by management<sup>34</sup>. Let’s look at one more example from Christensen. He wanted to talk about a company that is disrupting an industry, but was not based on a disruptive innovation:

*“Uber has quite arguably been increasing total demand—that’s what happens when you develop a better, less-expensive solution to a widespread customer need. But disrupters start by appealing to low-end or unserved consumers and then migrate to the mainstream market. Uber has gone in exactly the opposite direction: building a position in the main- stream market first and subsequently appealing to historically overlooked segments.” – Christensen, “What is Disruptive Innovation?”*

His point here is that Uber is making money and is serving customers who weren’t using taxis before Uber was introduced, but Uber itself did not meet all the requirements of a disruptive innovation. Uber<sup>35</sup> should not be killed by management or protected from management. It increases revenue in the same industry as the “incumbent” it would be “replacing.” See Appendix A for an explanation about why Uber is *not* a disruptive innovation, even though it is making big waves.

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<sup>33</sup> Sustaining innovations always seem to have enough funding because they fit with a company’s goals very naturally. I am not saying that we shouldn’t fund projects that contribute to sustaining innovations.

<sup>34</sup> Management should kill projects that aren’t on a disruptive path and would lose money when sold.

<sup>35</sup> If it were a division or project inside a larger incumbent company

## Chapter 4

### How does disruption fit with the Church?

When we evaluate the success of an innovation, we tend to look at sales. We can look at other metrics, such as customer satisfaction, market growth, and other factors; the main metric we use in business is revenue, though. The more money we make, the better. In fact, for business managers, revenue is the decision-making factor many times<sup>36</sup>.

Intuitively, this doesn't apply to our discussion about the Church. The Church has no real "product." It's not even like Netflix, whose product is intangible. This leaves us in a bit of a bind. We must create a way to evaluate the Church's effectiveness as an innovator, without losing sight of what we mean when we talk about the Church or Disruptive Innovation<sup>37</sup>.

As we take a look at the Church as a case study for innovation, we're going to keep a few qualifications in mind. First, as may be intuitive to anybody reading the examples in previous chapters, a single organization may have multiple innovations – disruptive or otherwise. So, each example we consider will apply to a general theme – the Church as innovator. Each example will be of an innovation, not proving as a whole that everything the Church has ever done is disruptive. Additionally, when discussing disruption, we should remember that correctly identifying the market that existed before the innovation is extremely important to analyzing the disruptive nature of an idea. The Church has disrupted more than one market in the past – whether it was Judaism or paganism or atheism or non-belief, we shouldn't simply think that an organization can disruptively innovate independently of other organizations.

Second, we're going to consider performance attributes - how is the innovation we're considering from the Church differ from what was previously offered? Our third metric for testing if a specific

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<sup>36</sup> Yes, profit is ultimately the most important factor to most businesses, but many managers are evaluated based on revenue performance. If upper management approves a project that is unprofitable at volume, then there's a joke we like to make in the field. "We may lose money on every sale, but at least we'll make up for in volume."

<sup>37</sup> Chapters 1-3

innovation from the Church is disruptive is where it falls in the market – we’re looking for new or low-end market footholds.

The final aspect of each case we will look at is its methodology and success. Did the Church follow Christensen’s recommendations<sup>38</sup> for creating a disruptive innovation or did they do something different or wrong according to the theory? And finally, was the disruptive innovation successful?<sup>39</sup> Not every successful innovation was disruptive and not every disruption is successful.

The success will be measured in two ways: has the innovation persisted and been updated by sustaining innovations and did the innovation *either* help to increase the absolute number of people in the Church *or* provide some sort of additional benefit to belonging to the Church? Now that we have everything set up nice and neatly, let’s look at my research.

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<sup>38</sup> Obviously, these examples predate Christensen, but do they follow the model laid out by him?

<sup>39</sup> See Appendix A for more argumentation about this

## Chapter 5

### Church Innovating Disruptively

This part of my thesis is mostly based on the work of three people who have already researched the Church as an innovator. My goal is to apply what they discovered about the Church to Christensen's model of disruptive innovation. To that end, I will be discussing Jesus' and his followers' innovative approach to including women and sinners in their ministry. I will also be discussing the Church and their abandonment of Jewish law as a disruptive innovation. In these senses, the Church disrupted Judaism. Since there were such a great number of heresies and responses, and only some of them would fit the disruptive model, we won't be looking at those individually, even though they are great examples of "innovation" in a more general sense.

#### Women

The first topic I want to discuss regarding the Church's innovation is women. The idea that women at some point were considered second-class citizens is shocking and appalling to us in our modern world. Since the introduction of the Church to the western world, women have become more respected, involved, and important in both public and private life. This was not the case in Jewish culture at the time of Christ. I could discuss the shocking nature of what was happening at the time, but Banks already did a good job in her work:

*"Rabbinic literature was filled with disparagement toward women. Women in the first century were treated as objects whose sole purpose was to please and serve men, which included bearing men children (Cruz, 2006). The rabbis taught that women were not to speak, be spoken to or even acknowledged in public. Additionally, women were made to walk six paces behind their husbands and were considered harlots if they wore their hair uncovered in public (Cruz, 2006). Women were not allowed to vote, not allowed to be educated and not allowed to receive an inheritance (Cruz, 2006). Women were*

*also viewed as "unclean" during menstruation and after childbirth, and would suffer further isolation for specified periods of time during and after each of these events (Cruz, 2006)". – Banks, "Jesus' Method of Inclusion in Leadership"*

There were plenty of examples of Jesus' encounters with women – he healed them, talked to them, dined with them, and more. According to Banks, this inspired his followers to do the same.

*"Following the examples of Jesus, leaders of the early church exercised sensitivity to the needs of women and acknowledge them as effective leaders and contributors to the establishing of the church. Deacons were assigned to minister to the needs of widows (Acts 6:1-6). Peter healed Dorcas and many townspeople received Christ as a result (Acts 9:36-42)." – "Banks, Jesus' Method of Inclusion in Leadership"*

Clearly, we have an innovation, but is it disruptive? Well, the performance package of the Church is different from Judaism. Was it a lower performance? Well, it depends. For men, this was a substantially lower performance package. For women, obviously this performance package was better. In what market did this innovation take hold? It's obviously a low-end or new market. Women were not as important as men at the time, making it a low-end market. Alternatively, society didn't cater to them, making it a new market. Ok, so taking care of women is an innovation and a disruptive one at that. Next, let's look at whether the Church followed Christensen's advice and if the innovation was successful.

Jewish rabbis would have been the high-end users of Judaism. Since high-end users are bad predictors of disruptive innovation, we would expect that Jewish rabbis would not have suggested including women as equal and respected members of society. Remembering the quote from Banks at the beginning of this section, we know that the rabbis were very critical and exclusive to women. We know that usually companies starve their disruptively innovative projects of funding (accidentally). This is recorded in the book of Matthew:

*"While they were going, some of the guard went into the city and told the chief priests all that had happened. They assembled with the elders and took counsel; then they gave a large sum of money to the soldiers, telling them, 'You are to say, 'His disciples came by night and stole him while we were asleep.' And if this gets to the ears of the governor, we will satisfy [him] and keep you out of trouble.'" The soldiers took the money and did as they were*

*instructed. And this story has circulated among the Jews to the present [day].”*  
*– Matthew 28:11-15*

As we discussed, we can't measure everything with regard to the Church in terms of funding, so this story serves as an example of the incumbent<sup>40</sup> firm starving the innovation of social capital, which is needed to grow in numbers of people. Finally, we have the idea of spinning off a division to create disruptive innovations. That is basically what happened here – Christianity started as an offshoot of Judaism. Christ and many of his immediate followers were Jewish before they were Christian. The Church then became its own entity (Wilken) – much like an extraordinarily successful business division with a disruptive innovation. So, in this example, the Church did follow pretty closely what Christensen recommends for assisting the development of disruptive innovations.

Was this development sustained and successful? The answer to both: yes. Women are still respected in the Church – the Church still cares for widows and act as leaders in the community. As mentioned above<sup>41</sup>, many people joined the Church after Dorcas was healed. In this case, a growth in absolute number of people means a successful disruptive innovation.

### **Sinners**

This second example, the discussion of “sinners,” follows the last argument I provided pretty closely. Sin is an offense against God (Catechism of the Catholic Church – Sin). Sin was taken pretty seriously by the Jewish authorities at the time of Christ, so when Christ and his followers started reaching out to sinners, this was pretty important (Banks).

*“And it came to pass, as Jesus sat at meat in the house, behold, many publicans and sinners came and sat down with him and his disciples” (Matt. 9:10). Traditionally, the Jewish meal was considered an intimate occasion to be shared with family and those of high social or religious standing (Zaspel, 2002). However, Jesus made it clear to His detractors that His mission was to*

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<sup>40</sup> The Jewish rabbis – in text as “chief priests” and “elders”

<sup>41</sup> In Acts 9

*minister to sinners. “I am not come to call the righteous, but sinners to repentance” (Matt. 9:13). – Banks, “Jesus’ Method of Inclusion in Leadership”*

Once again, we look to see if this innovation is disruptive. Again, the performance package is different. And again, it has a lower performance. Sinners would have been a lower social tier than well-respected rabbis and teachers<sup>42</sup>. And just as it was in the last example, this is a new market. While the sinners were bound by the law, the leadership of Judaism didn’t minister to them particularly. Now that we meet all the qualifications of a disruptive innovation, let’s see if this innovation follows Christensen’s guidelines. It started from a spin-off<sup>43</sup>, and it was objected to by the Jewish leaders<sup>44</sup>. Was it sustained and successful? Yes and yes. The Church still includes sinners and people who weren’t part of the Church before joined because of this inclusivity: “A large number of people from the towns in the vicinity of Jerusalem also gathered, bringing the sick and those disturbed by unclean spirits, and they were all cured.” Acts 5:16<sup>45</sup>

### **Jewish Laws**

Another way that the Church innovated<sup>46</sup> was by totally changing the requirements to participate in the religion. This example differs from the previous two examples in one very meaningful way – it occurs after Jesus is no longer the earthly head of Christianity. The apostles actually now have to work things out and innovate without their original leader.

The primary source for this story is in Acts. In Acts 10, both Peter<sup>47</sup> and Cornelius<sup>48</sup> have a vision from God. Cornelius is told to find Peter; however, Cornelius is not Jewish, so it is unclear if he will be

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<sup>42</sup> Think of an elderly person compared to an NFL star – sad, but a fitting comparison

<sup>43</sup> In the same way – the Church came straight out of Judaism.

<sup>44</sup> Equivalent here to starved of funding (social capital) and the high-end customers being bad identifiers of disruptive innovations.

<sup>45</sup> I think I warned you that these first two arguments seem really similar – we should be getting pretty good at this by now, right?

<sup>46</sup> Compared to Judaism – we can’t lose sight of the incumbent

<sup>47</sup> One of the Apostles

<sup>48</sup> Soon to be a Christian for the first time

received by Peter. Peter has a vision instructing him to eat animals that were unclean according to Jewish law. Peter interprets this to mean that there is no longer a distinction between “clean” and “unclean” neither in food nor in *people*. Then in Acts 15, the Church gathers together and debates the idea of cleanliness according to the law. Up until this point, to become a “full” Christian, converts had to obey all the Jewish customs – including circumcision and dietary restrictions. After Acts 15, new converts no longer had to follow all the Jewish laws – which meant they could eat meat<sup>49</sup> that used to be unclean and they could avoid circumcision.

*“Although the initial focus seemed to be on dietary regulations, the greater issue centered upon the availability of salvation to the gentiles. Without an ultimate realization of a substantial paradigm shift to overcome this significant cultural barrier, the emerging Christian Church would be stillborn, unable to expand beyond the narrow constraints of the predominant Jewish culture.” – Oster, “Innovation and the Early Christian Church”*

Oster indicates that this innovation is actually a dramatic shift that means more than just being allowed to eat whatever kind of animal you want to eat. Let’s see if this innovation fits the model of disruption. It does have a different performance package than the previous method – all meat is allowed. Is the performance lower on the S-curve? I would argue that it is. For people looking to join an organized religion or to participate in the full life of Judaism, this method seems much less enticing<sup>50</sup>. And it exists, of course in a low-end market. The people fully bought in to conversion to Christianity had already been circumcised and were avoiding unclean meat. It was the other “customers” who were thrilled with the news – low end customers who didn’t need all the baggage that came with Judaism.

Did this happen by following all of Christensen’s recommendations? Not exactly. High end users are *usually* bad at predicting disruptive innovations, not always. In this case, several high-end users<sup>51</sup> asked for this innovation to occur. It also wasn’t starved for funds. The leadership team fully supported

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<sup>49</sup> As long as it wasn’t sacrificed to idols

<sup>50</sup> I know that sounds backwards – who wouldn’t want unrestricted meat and to avoid circumcision? But keep in mind that these were hallmarks of participating in the mainstream culture at the time. Avoiding these things isn’t necessarily good if you’re trying to integrate to a rigid community.

<sup>51</sup> Paul, Peter, Barnabus, and James, at least



the new innovation and did not do anything to starve it from funding – there was a lot of arguing, but they eventually all agreed. Finally, they *did* use a spin-off. To this point, Peter and Paul had been going around preaching on their own, but this time they called together a whole Church council. While there is one similarity, very little of this looks like what Christensen recommends for helping a disruption succeed<sup>52</sup>.

Finally, we look at the sustainability and success of this innovation. Still today, circumcision is not required to become a Christian. The fasting laws have developed since Acts 15. For example, there is a fast on Ash Wednesday and Good Friday now (*Fast & Abstinence*). The innovation has been sustained. It was also successful – in Acts 15, “When the people read it, they were delighted with the exhortation.” This means that the disruptive innovation meets the requirements we set forth for our analysis.

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<sup>52</sup> This neither indicates a fallacy with the theory or disproves my argument. Christensen’s recommendations for helping innovations succeed are not hard and fast rules. Disruptions can succeed without following every aspect of his advice (as in my example)

## Chapter 6

### Church Disrupted

One of the criticisms I received while writing this paper was about my supposedly obvious bias in favor of the Church. I can see why people are concerned about this bias, but let's talk about an example to help dispel the idea that I think the Church is perfect in some way.

What we've discussed so far are places where the Church has been the innovator. There have been times in history, though, that the Church is the disrupted player in a market. Sometimes these examples are not quite so obviously modeling disruptive innovation; let's look at one now.

#### The time that Luther quit (The Protestant Reformation)

Most people have heard of the Protestant Reformation in some way or another. Headlined by Martin Luther and John Calvin, this event<sup>53</sup> is usually seen as the flashpoint for the invention of Protestantism. It wasn't a single event and it did not explode in popularity immediately, at least not in the way that we usually hear about these days.

For years before Luther, there were other reformers in the Church – Wycliffe, Hus, Francis of Assisi, and more. The theme that connected all of them was a sort of renewal of the Church. They wanted to get back to some ideas or traditions they each felt had been lost through the history of the Church. So, Luther was merely a sustaining innovator for the innovation that was the reformation.

What did the reformation offer that was different from the existing Church? They had two pillars that separated them from the existing Church – *sola fide*<sup>54</sup> and *sola scriptura*<sup>55</sup>. Now we have an innovation. The next step to analyze is the market. Luther started in Germany – a Catholic kingdom. It

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<sup>53</sup> A period of several years, kicked off in 1517 by Martin Luther lasting until about 1534 when King Henry VIII started the Anglican church.

<sup>54</sup> Faith alone

<sup>55</sup> Scripture alone

wasn't a "new" market, but we can also use a lower-market foothold. The Church at the time of the reformation was powerful and wealthy – they could take care of you (Reformation). They could also find you if you "betrayed" them. Switching to Luther's church<sup>56</sup> would be quite a risk to take. The market of a reformation church definitely was lower on the threshold than the existing Church market.

Now that we have established that the reformation fits the model of a disruptive innovation, let's look at whether it was implemented according to what Christensen recommended. The answer is basically "yes." It wasn't created by the main organization of the Church. Existing customers<sup>57</sup> didn't ask for the innovation. Technically, Luther may fit the profile of an existing customer, but he wasn't one of the high-end customers that would have demanded higher current performance from the Church<sup>58</sup>.

The Church didn't enter the new market until it was established, either. They started dealing with the concepts and issues proposed in the reformation after the reformation occurred. For example, the Council of Trent was called in 1545 by Pope Paul III to respond to Luther and his counterparts (Counter-Reformation). Finally, the Church did not respond with their main "profit-making" division. They didn't just respond with bishops and theologians writing rebuttals or priests bringing people back to churches. The Church called a council with a special purpose to respond to the reformation (Council). This means that the reformation parallels all of Christensen's recommendations.

Finally, we ask "was the reformation a successfully disruptive innovation?" The answer is obviously "yes". The number of followers that Luther and his colleagues have now is greater than when they started. They successfully started their innovation with a low-market foothold and have since expanded. The next example provides evidence of the growth of the reformers' "new church," for which I would use the term "Protestantism" (Definition of PROTESTANT).

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<sup>56</sup> Or really any other church that was just starting at the time

<sup>57</sup> Think bishops, popes, theologians, etc.

<sup>58</sup> Which would be the incumbent technology in this example

### **The time when everyone forgot about God (The Enlightenment)**

The enlightenment occurs in the period between the Glorious Revolution in 1688 and the French Revolution in 1789 (“Enlightenment | Definition, History...”). When I use the term “enlightenment,” I am referring to the method of thinking that indicates truth can be known through human reason and individualism (“Enlightenment | Definition of...”). This idea slowly took form – the final system of thought that we consider the enlightenment comes from a series of sustaining innovations: Protestantism, humanism, and the scientific method.

The enlightenment may be a disruptive innovation *only* when compared to the Church. In all the ways mentioned above, it is a sustaining innovation. It’s a new idea, but it would still only be sustaining those other ways of thinking. The enlightenment offered something that the Church didn’t, though. Before we get ahead of ourselves, let’s make sure that the enlightenment does fit the model of disruptive innovation.

The enlightenment was substantially different from what the Church was offering in that it took away the general concept of revelation from a religious authority. Instead, it focused on personal, human reason. There was a method of thinking even within the Church called “Scholasticism,” which focused on dogma and reason (Definition of SCHOLASTICISM.), which predates the enlightenment. It was very developed, particularly by Thomas Aquinas (“Enlightenment | Definition, History...”), so it was performing on the high end of the S-curve. The enlightenment on the other hand, offered a different performance package. It took away the dogmatic aspect of thinking about things. It also developed slowly – Thomas Jefferson was as much a part of the enlightenment as the revolutionaries in the Glorious Revolution, even though his more refined contributions came much later.

Even though the enlightenment meets two of our qualifications for a disruptive innovation, it fails an important test: where did it enter the market? Enlightenment thinkers and producers were on the high-end of the philosophy market. Even though at its inception, the enlightenment did not answer as many questions immediately and accurately as scholasticism, the people who were adopting the philosophies of

the enlightenment were great writers and thinkers<sup>59</sup>. To be a disruptive innovation, the new innovation must meet all of Christensen's criteria. The Enlightenment meets some of them, but not all. Since it does not fit the model of disruptive innovation, I'm not going to discuss whether it follows Christensen's suggestions for developing a disruptive innovation.

We can still ask if it was successful and sustained? The answer to both these questions is yes *and* no. The enlightenment was successful in that it produced much change at the time that it was relevant. It is not still successful because it has been replaced by positivism, then romanticism, then modernism. It was sustained in that it developed over time. To that extent, it fits our model of a continuing innovation. And we could stop there, but it is also important to note that it has not been perpetually sustained since its introduction. Since the enlightenment has been replaced by other methods of thinking, it is no longer being sustained. This answer can afford to be as convoluted as it is because the enlightenment doesn't fit the model of disruption, so we're evaluating it on criteria that don't fit what it is perfectly.

The Church isn't perfect as a disrupter, though; the enlightenment shows how an incumbent can be "disrupted" even if Christensen's model doesn't fit<sup>60</sup>.

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<sup>59</sup> Like Hume and Jefferson

<sup>60</sup> Appendix A discusses this dichotomy

## Chapter 7

### Conclusion

Innovation isn't just a buzzword for change, it's an academic field. Christensen stands as a titan in the field with his popular theory of disruptive innovation. Disruptive Innovation is when a challenger to an incumbent organization creates a new product that has a different performance package, performance lower on the S-curve, and starts in a new or low-end market foothold. Christensen recommends helping disruptions succeed by ignoring high-end customers, giving disruptive technologies plenty of funding, looking for markets that the incumbent has not yet entered, and making spin-off divisions to protect disruptive innovations.

The Church has been home to disruptive innovations and has been disrupted by innovations. Examples of the Church disrupting includes how it treats women, how it treats sinners, and how it abandoned Jewish dietary law. It was disrupted by the protestant reformation and the enlightenment<sup>61</sup>.

Christensen's model can apply across the gap from the for-profit world to the non-profit world. Evaluating the success of a disruption will look slightly different when evaluating the Church than when evaluating a for-profit company.

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<sup>61</sup> The enlightenment was not a disruptive innovation, though – See Chapter 6 “Church Disrupted – The time when everyone forgot about God (The Enlightenment)”

## Appendix A

### A Response to *What the Gospel of Innovation Gets Wrong*

In my research about disruptive innovation, it became obvious to me that there were some holes in the theory that would occur to someone just being introduced to it without guidance. The apparent contradictions would appear when reviewing the theory critically for the first time. These problems with the theory are easily explained with one more level of thought that brings in additional examples and reasoning.

A Harvard professor named Jill Lepore agrees with my analysis that there are apparent problems with the theory, but she didn't spend enough time thinking about the problems to discover how the theory actually works in practice. One of the things Lepore is most concerned about is the constant discussion of disruption (Lepore), a concern that Christensen himself shares (*Christensen responds...*)! Her other problem is that "the theory of disruption is meant to be predictive." She feels that it isn't. Let's take a look.

### Disruption is a Process

As discussed throughout the thesis, there are many aspects that would make a certain technology or innovation truly disruptive – it's not just a certain technology. This seems to be a concept that Lepore doesn't grasp at all. She looks at a few different examples from Christensen<sup>62</sup> and adds a variable that she thinks should disqualify something from being an innovation because another company was already working on it. This seems fair, at first. We have one of those problems that seems to wreck the theory.

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<sup>62</sup> Including the hard disk drives, which I discuss in Chapter 2 "Disruptive Innovation"

The response is very simple: competitors aren't disruptive just because they exist. Lepore tries to challenge the use of the word innovation when Christensen is working on describing disruption. There is no stasis in the argument, just terms that don't work congruently.

*“For example, small competitors that nibble away at the periphery of your business very likely should be ignored—unless they are on a disruptive trajectory, in which case they are a potentially mortal threat. And both of these challenges are fundamentally different from efforts by competitors to woo your bread and butter customers.” Christensen, What is Disruptive Innovation?*

Christensen himself discusses this in the above quote. Why would you worry about another company that is doing something different if you think it won't work?<sup>63</sup> The other way to look at this is that disruption is the path, not the product. It doesn't really matter if two companies have similar products in a similar space. If one of them is meeting all the requirements of the model discussed in chapters 2 & 3 and the other company is not meeting those requirements, only one of the companies is being disruptive.

It is important to understand that the model depends on evaluating the process.

### **Disruptors Business Models look Different**

A disrupter doesn't try to get the big-paying customers. This is another point that Lepore misses. Sure, some companies that got disrupted are still around and still doing very well. That doesn't mean that the disruptions weren't real somehow. A disrupter will be trying to engage a large number of new users. Or a large number of users who have a lower price point. Eventually, they move upmarket to challenge the incumbent's grip on the technology.

An incumbent in a market will do their best to preserve the market. They will sell to existing customers and work to increase the prices those customers are paying. The companies can do this by

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<sup>63</sup> Remember in Chapter 3 our discussion of high-end customers being bad at evaluating disruptions



offering better performance options on the existing technology, offer other complementary benefits with their technology, or provide other intangibles to customers. They will *not* move down market to engage a new technology – why would they? Usually this means that incumbents will fail eventually compared to a disrupter.

This does *not* mean that incumbents disappear or have no hold in the market simply because a disruption is occurring. If I'm selling you old hard drives that fit your needs, you don't stop buying from me for a while, even if the new hard drives are smaller and possibly cheaper. This gives incumbent firms a chance to create a new disruption, adapt and adopt the new disruption, or find a different market that they weren't servicing before. The survival of incumbents does not indicate a lack of disruption.

### **Some Disruptive Innovations Succeed – Some Don't**

Here's the point that Lepore seems to be most upset about. She accuses Christensen of using only examples that fit his model to prove his point. According to her, revisionist history is what saves Christensen's theory. This simply isn't true. The example that I would point out is the iPhone. Christensen didn't think it was a disruptive innovation. The iPhone didn't seem to be disruptive to the phone or PDA market. From this perspective, Christensen was right. In hindsight, it's obvious that iPhones disrupted laptops – not phones or PDAs.

It's hard to talk about disruptive innovations that fail. How would we discuss an innovation that disappears after a short period of time and it only existed in a new or low-end market? Those don't make the news and they make boring business case studies.

Necessarily, then, we can *only* discuss successful disruptions with any detail. There can also be disruptive innovations that we miss in our discussions. The point is not to make the theory look good. Christensen is interested in the theory, and I am interested in the application of that theory.

Part of the challenge is how to use the predictive nature of disruptive innovation to assist with identifying technologies and firms worth investment. Sometimes we will be wrong about our predictions using the model<sup>64</sup>. By the time we realize that we missed a disruptive innovation, all we can do is learn from it. The theory should continue to get better – it doesn't need to be perfect all the time. We also don't need to retroactively apply the theory to sound good just because we think we missed something. These are the accusations Lepore levels, but they generally fall flat when considered with some amount of academic decorum.

### **Moving Rapidly doesn't Indicate Disruption**

The section heading basically says it all for this one. A firm isn't automatically disruptive just because it can rapidly iterate. Think of Uber – all we need to do is show that it doesn't fit the model in one way and we exclude it from consideration as a disruption. How about the fact that it took the upper-end of the taxi market and solved every pain point with taxis? It's not a new or low-end market; therefore, Uber isn't disruptive. Uber can rapidly iterate, but it isn't disruptive.

### **Conclusion**

Christensen and his theory shouldn't be held accountable to a lazy use of terms by an unaware public. Disruptive innovation is a popular theory for innovation, and fittingly so. There may seem to be issues with it on the ground level, but after putting in a little bit of thought and effort, they generally go away.

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<sup>64</sup> See Appendix C for more

## Appendix B

### Religion: A Disruptive Innovation in Popular Culture



Figure 6: Dilbert April 4, 1991

Adams, Scott. "Dilbert Comic Strip on 1991-04-04 | Dilbert by Scott Adams." *Dilbert*,

<http://dilbert.com/strip/1991-04-04>. Accessed 27 Feb. 2019.

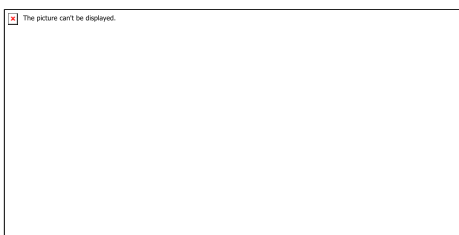
## Appendix C

### Math in the field of Disruptive Innovation

The following article was published in 2015 as a contribution to the debate found in Appendix A. It provides many of the technical details I omitted for the purposes of brevity, but it's the most important document to read if you're looking for the technical details from the Christensen/Lepore debate.

#### Christensen Vs. Lepore: A Matter Of Fact

[Thomas Thurston](#) 5 years



Thomas Thurston Contributor

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Nothing gets keyboards clicking like a good controversy. Recently Jill Lepore, a history professor at Harvard, [published a fierce article in the New Yorker](#) accusing another Harvard professor, Clayton Christensen, of being a quack.

Lepore didn't use that word, but she may as well have. Christensen is a business school professor renowned for his "Disruption Theory" about why businesses survive or fail. Lepore basically

says Disruption Theory is no-good because it's reckless, based on bad evidence and can't predict the future. An ability to predict the future is, after all, the true test of a model.

Christensen [fired back](#) in a Bloomberg BusinessWeek interview days later, followed by droves of Internet chatter by onlookers. The real question is, who's right? Christensen or Lepore? Is this just a case of one reasonable opinion versus another?

Actually, no. The unpopular, debate-killing truth is opinion doesn't matter. Whether or not Disruption Theory can predict the future isn't a matter of *opinion*, it's a matter of *fact*.

Here are the facts.

### Predictive Validity

Most people don't know this, but it turns out Disruption Theory is the foundation of the most accurate, thoroughly vetted, quantitative prediction models of new business survival or failure in the world today. Oops.

Allow me to explain. Nearly a decade ago I was working at Intel when it dawned on me to turn the company's new business investment history into a formatted dataset. The goal was to look for quantitative patterns to better predict which Intel innovations would succeed or fail. Generally speaking, most businesses fail (around 75 percent) before their 10th birthday, regardless of whether they're a startup, a venture capital investment or launched by a company like Intel. I wanted to know if data-centric analyses could better pick winners.

Whether or not Disruption Theory can predict the future isn't a matter of opinion,  
it's a matter of fact.

Strong patterns began to emerge, suggesting it was far more possible to predict the fate of innovations than anyone thought possible. The clearer these patterns became, the more I noticed how similar they were to phenomenon Christensen had already been writing about for years. At the time Christensen had last published the book *Seeing What's Next*, claiming Disruption Theory could predict the kinds of outcomes my research focused on. While Christensen's work had a litany of supporting examples, it struck me (perhaps as it struck Lepore) that the research didn't have the kinds of data I cared about – quantitative predictive data.

Christensen had reason to believe Disruption Theory was predictive, but I wanted to know *how* predictive – exactly. Was it 10 percent predictive? 21 percent? 55 percent? 98 percent? As a manager in the trenches of Intel, this was the specificity I needed before deciding if Disruption Theory was useful. Those details were the gap between theory and practice.

Since only around 25 percent of new businesses survive, to be useful any model would have to be more than 25 percent accurate at picking winners on a consistent basis. It's important to note how *improvement*, not perfection, is the standard to which science is valued. For example, a new cancer treatment is valuable if it saves 10 percent more lives, even if it doesn't cure 100 percent of patients. At any point in time, solutions just have to be better than the alternatives. Since the patterns I found were more than 25 percent accurate, and those patterns seemed to dovetail with what Christensen had long written about, I decided to test Disruption Theory on its own.

Predictive testing is part of a structured discipline called the Scientific Method. While it can be part of a social science education, it's most commonly associated with "hard" sciences like Physics, Chemistry and medicine. It's why new drugs have clinical trials. A model has to pass through stages including blind tests across random control groups to see if its predictions are not only accurate, but also support statistically significant levels of confidence. Predictive accuracy with 95 percent or more statistical confidence means the model is probably right. Less than 95 percent confidence means the model isn't reliable enough.

So how'd it do? Was Disruption Theory more than 25 percent accurate with at least 95 percent statistical confidence at picking winners? In the first round of tests, the only blind dataset I had at the time was barely big enough to meet minimum sample size requirements (it only had 48 companies). Still, it was enough to at least run some preliminary trials, and it's worth noting Christensen wasn't involved – I'd never met the man. Instead, I did my best to reduce his theory to falsifiable yes/no logic using published research. Even so, in the first round these relatively crude rules based on Disruption Theory blindly predicted if new businesses would survive or fail with 94 percent accuracy and over 99 percent statistical confidence. Holy crap.

If business research had "Eureka" bathtub moments, this would be one of them. This early test was described in detail by a former co-author of Christensen's named Michael Raynor in the book *The Innovator's Manifesto*. These results alone satisfy the burden of proof demanded by Lepore's article. The debate could end right there.

But there's more.

### **Research Expansion**

My research started getting attention in and out of Intel. So while at Harvard one day I barged into Christensen's office unannounced (he asked, confused, if I was there for a job interview). I introduced myself and summarized what I'd been working on. Months later I found myself living in Boston, leading joint research between Intel and Harvard to expand and improve these predictive models for new innovations.

Improvement, not perfection, is the standard.

I was surprised to learn Christensen wasn't the only guru whose theory hadn't been tested. To my knowledge – brace yourself – *zero* business gurus in the fields of strategy or innovation had ever subjected their theories to the level of predictive testing we put Christensen's work through (except for, partly, a little work by Eric Von Hippel at MIT in 1976 that, by oddball coincidence, made reminiscent discoveries to what Christensen and I found decades later).

In business strategy and innovation departments, predictive testing simply isn't the norm. Digest that for a moment. I applaud Lepore for calling out a popular business theory for lacking proof, but it's no small irony that she targeted the one theory that's been tested from hat to socks.

Following the Intel-Harvard research I've continued to build predictive models as a data scientist, and more recently as a venture capitalist and head of research of an investment firm. In hindsight, the early Intel sampling cited in *The Innovator's Manifesto* seems quaint compared with the subsequent work that's followed.

### **Persistent Results**

Nearly a decade later, highly refined versions of these Disruption-based models had produced more than 3,400 blind, real-world predictions about business survival or failure. These predictions informed more than \$100 billion in organic growth, venture capital, stock trades and acquisition investments. When the models predicted survivors, they were right 66 percent of the time. When they predicted failures, they were right 88 percent of the time. Adding all survival and failure predictions together, the total gross accuracy was 84 percent.

While lower at first glance than the 94 percent accuracy of the first early test at Intel, the models now account for robust combinations of industry, geography and temporality in ways early models didn't. In each case, the predictions have sustained 99 percent levels of statistical confidence without a flinch.

Science is a process, not an event, and last year the models took another leap forward. More sophisticated models yet – all based on Disruption Theory – continue to evolve, now involving more advanced algorithms and technologies. Taken together, the latest methodologies produced over 20,000 blind predictions (and counting). Not one but *multiple* Disruption Theory-based models, each drawing from different data and underlying algorithms, continue to deliver 66 percent sustained accuracy with 99 percent statistical confidence.

Put into perspective, the models have now made more predictions than all U.S. venture capital deals over the past five years combined, with a predictive accuracy more than 2.5X greater than the venture capital industry as a whole.

Lepore's article suggests the word "disruption" is over-hyped to the point of an empty rallying cry. She's right.

A lot of people point to examples of when Disruption Theory, or Christensen, was wrong. It was wrong about the iPhone. Tesla. Ralph Lauren. In fact, it's been wrong over 7,500 times by my count (remember it has a 33 percent error rate when predicting winners). Keep in mind, however, it's 66 percent right while everything else is stuck at 25 percent. Improvement, not perfection, is the standard. Disruption isn't the end-all-be-all of management thinking, but it's a solid contribution to the field.

The theory's accuracy is also disproportionately higher for big financial wins, as opposed to small wins. I bring this up because some people look at exceptions like the iPhone, Tesla and Ralph Lauren and fret that the models somehow miss blockbusters. This too is a question of fact, not opinion, to which there's been considerable analysis. The bigger a win, the greater the odds current Disruption-based models will catch it. I just used examples like the iPhone and Tesla because they're well known.

As if it weren't enough, Disruption Theory has also proven highly replicable. It's rules-based, not a fuzzy art form. More than 1,000 corporate managers and students at schools including Harvard and MIT have been tested both before, and after, specific training in Disruption Theory (over 8,000 observations). When asked to make blind predictions about the survival or failure of real (but disguised) businesses, test subjects with no training averaged 35 percent accuracy, whereas after being trained the average accuracy rose to 65 percent. This demonstrated that anyone following certain Disruption-based rules can achieve similar results — a hallmark of good science.

### **Final Opinion**

Lepore's article suggests the word "disruption" is over-hyped to the point of an empty rallying cry. She's right. My research treats disruption as an extremely narrow, specific term of art, much as Christensen also takes great pains to articulate. Most people throw disruption around loosely, misstating, misunderstanding and misapplying it at the same time. I'd say at least half of the startup pitches I hear claim to be disruptive, but few of them are.

Disruption Theory is like quantum mechanics in that, while anyone can read books about it, it takes a relatively high level of rigor and precision to accurately apply. It's science, not art. As someone who understands disruption at a quantified level, I heard Lepore's critique the way I'd probably sound if I read just one book on quantum physics, determined myself to be an expert (which I'm certainly not), and then called it all hogwash.

Yet the article goes further. Entrepreneurs are called "ravenous hyenas," investors are accused of having no conscience, innovation is blamed for the Holocaust, Hiroshima, genocide, global warming and both World Wars. That's a stretch, to say the least. Innovation isn't monolithic — the word is like "engineering" in that there are many flavors with different impacts on the world. Christensen writes about "sustaining" verses "disruptive" innovation, where sustaining



innovation tends to deliver incremental growth, favor powerful incumbents, decrease access for those with fewer means and drive up costs.

In contrast, disruptive innovation tends to create transformational growth, opportunity for underdogs, greater access for the less fortunate and lower costs. This is why, for many, disruptive innovation is a worthy goal. By no means does it inherently negate the conscience, loyalty or character of those who pursue it.

I can't help but notice another irony. Christensen has written two books arguing colleges and universities are beginning to face signs of disruption from online education, corporate and on-the-job training, and even YouTube (think Kahn Academy). For example, the University of Phoenix is now the largest college in the U.S. by enrollment, having over three times as many students as the second runner up (Pennsylvania State).

Lepore could be right about Disruption Theory, but the odds are literally over 500,000 times greater that, as a matter of fact, she's just plain wrong.

Christensen says higher education faces a genuine threat – even at incumbent bastions like Harvard where he and Lepore work. However Christensen also predicts incumbents, when faced with disruption, overwhelmingly dismiss it, downplay its encroachment and resort to justifying their industry domination as a moral imperative.

Lepore dismisses Christensen's arguments about disruption in higher education. As support, rather than challenging the substance of Christensen's case, Lepore takes a superficial, snarky stab at some of his examples and quickly migrates to another topic. The irony, however, is by offhandedly dismissing evidence that higher education may be facing serious disruption, Lepore – as part of the incumbency – is doing exactly what Disruption Theory would predict.

This isn't the first time Christensen's theory has been challenged, and Lepore is correct to demand more predictive proof from business theories. There's no shortage of hucksters, and bad business advice isn't a victimless crime; especially for anyone whose life has been damaged by business collapse. It's just a shame that when the article says "disruptive innovation can reliably be seen only after the fact," it doesn't seem to be aware of the relatively quiet, albeit massive, vetting that's been done. Lepore could be right about Disruption Theory, but the odds are literally over 500,000 times greater that, as a matter of fact, she's just plain wrong.

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## ACADEMIC VITA

# ROBERT BADMAN

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### EDUCATION:

**The Pennsylvania State University**  
**Schreyer Honors College**  
*Smeal College of Business*

**University Park, Pennsylvania**  
**Graduation Date: May 2019**

**Major:** B.S. Corporate Innovation and Entrepreneurship

**Minor:** Information Management Systems

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### Honors:

Schreyer Honors Scholar, Smeal College of Business Dean's List, HOBY Ambassador, EAST Conference Ambassador

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### WORK EXPERIENCE:

#### Kohl's

*Manager in Training Intern*

**Lower Makefield Township**

**June 2018-July 2018**

- Managed and inspired team of 100+ employees for daily tasks and objectives
- Reviewed current and historical sales trends to create actionable plans to increase sales
- Supervised and trained customer service associates for better service and credit solicitation results
- Diagnosed obstacles to success in my department such as disorganization and replenishment challenges

#### Rob's Cat-Sitting

*Founder, Owner, and Operator*

**Yardley, PA**

**June 2011-Present**

- Contacted potential customers in person and via telephone conversations to grow business
- Developed and distributed a pricing strategy to ensure consistent billing
- Obtained and created lists of responsibilities tailored to each client to ensure highest quality service
- Supervised and generated training procedures for present and future employees to assist with service quality

#### Richboro Dairy Queen Grill & Chill

*Management Intern*

**Newtown, PA**

**May 2017-August 2017**

- Optimized and distributed weekly schedules for a team of 30+ people
- Directed personnel decisions during the hiring and firing process for team members and team leaders
- Collaborated with leadership team for store planning, including supply chain and marketing decisions
- Trained team members and team leaders on food safety and restaurant cleanliness procedures
- Facilitated leadership training for shift leaders and new managers for operation after opening

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### LEADERSHIP:

#### Penn State Newman Catholic Student Association

*President*

**University Park, PA**

**May 2018-Present**

- Directed fifteen (15) person board of student volunteers to plan, design, and execute events and activities
- Coordinated weekly leadership meetings with the Newman student board
- Collaborated with on-campus ministry team to ensure availability of events directed by trained priests
- Supervised planning and execution of weekly general body meetings for about eighty (80) club members
- Initiated new spiritual and social events with other Penn State University Park student organizations

#### Penn State Newman Catholic Student Association

*Religious Education Chairman*

**University Park, PA**

**May 2017-May 2018**

- Assembled a team of volunteers to plan and execute the annual fall retreat
- Coordinated, scheduled, and directed teams of leaders to run weekly small group bible studies
- Organized and conducted purchases for the Newman student library
- Collaborated with the Newman student board at weekly leadership meetings for long-term projects
- Directed and supervised Thursday Night Theology leaders and topics in collaboration with the board