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How Startups Succeed — A Look at How Architectural Innovation Provides a Competitive Advantage

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HOW STARTUPS SUCCEED: A LOOK AT HOW ARCHITECTURAL INNOVATION PROVIDES A COMPETITIVE ADVANTAGE

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ABSTRACT

PONTUS VILLEHARD ANDERSSON: How Startups Succeed: A Look at How Architectural Innovation Provides a Competitive Advantage
(Under the direction of Tony Ammeter)

The recent rise of high profile startups in the news and the prolific attention given to the entrepreneurial culture during an economic makes understanding how startups work a point of interest for many. The glamorization of shows like “Silicon Valley” and the growth of online personalities and their followers makes it even more exciting. But why do so many startups fail so drastically and a few reach unfathomable heights and why are household companies so interested in them? This paper addresses one of the underlying themes that drives business today, specifically, architectural innovation, or how companies organize. By following the diary of the CEO of a locally successful startup, this paper draws conclusions on how organizational architecture impacts a startup’s ability to acquire knowledge that allows it to be competitive.

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I. Problem

Startups continually create disruptive innovations in industries previously dominated by large established firms (Christensen, 1997; Lepore, 2014). The narrative is much always the same. An overwhelming lack of sufficient funding, partnerships, and resources historically point to a recipe for failure. The new innovative ideas or products they produce open avenues in existing markets. In this research project, I explore characteristics about new entrants that gives them a competitive business advantage over large established firms in developing innovative products, in particular innovations in organizing (termed 'architectural innovations') the structure of the firm. I focus on a nascent high-technology industry - smart mirrors - and seek to answer the research question "How does architectural innovation in startups lead to competitive business advantage over large established firms in the smart mirror market?"

Plenty of new innovations enter the market place every day, yet only a few ever reach fruition with rates ranging from 47% to 90% depending on the market (Gourville, 2006; Cierpicki, Wright, Malcolm, & Sharp, 2000). Young firms are habitually not successful, with success rates ranging from 1 to 25% which makes those who do succeed so much more intriguing (Cusumano, 2013).

Small and Medium-Sized Enterprises (SMEs) have marketed success within the realm of business. Recent years have seen the returns of billion-dollar venture capital investments propelling small businesses such as Uber and Pinterest to new heights (Porat, 2015). Disruptions amongst the firms in the tech industry are not new (Downes & Nunes, 2013). Whether the narrative encompasses news, transportation, or smart technology, ecosystems are being disrupted and moved in big ways by small companies.

Their ability to make these changes comes with its fair share of challenges. We need to accept that SMEs are prone to failure. Hundreds of thousands of SMEs fall victim to the rigors of the economy and their industries, which makes the successes so important to study. Innovation by small enterprises shapes industries (Christensen, 2012; Clark & Henderson, 1990). When they succeed, they succeed big. The Ubers, Snapchats, and Airbnb's of the world are widely known because they changed their industries. Additionally, their impact also changes the landscape of our economy (Kalak & Hudson, 2015). Small firms are credited with creating new job opportunities and innovation regardless of the environment they exist in, which means the survival of these SMEs is paramount to tapping into their success over the long-term.

Understanding this success starts with understanding the way these firms are structured. As venture capitalists change their approach from investing in ideas to investing in teams, it does not make sense to focus predominantly on the products or ideas these entrants pursue (Cusumano, 2013). Management ideas and structure allow for movement that is both decisive and responsive (Sedighadeli & Kachouie, 2013). This climate is what leads to new avenues or methodologies of development of projects (Christensen, 2012). Many of the difficulties established firms experience are tied to an inability to react responsively because they are unaware of how they should react (Velu, 2015) or even if they should react (Christensen 1997). These larger firms keep doing the right things, acting almost entirely in the same interests as their young competitors, but fail when it comes to implementing these new strategies because they lose sight of what their customers will want as opposed to what the firms wants (Christensen, 1997).

II. Importance of Research

The rise of new entrants in the marketplace has shifted investments in innovation. Disruptive companies like Airbnb, DraftKings, Tinder, and Uber have changed the way their industries think (Rivlin-Nadler, 2016). Their innovation is often unable to be replicated by established firms and allows them to gain solid entry to the market (Christensen, 1997). I hypothesize that these new entrants acquire knowledge differently than established firms. Frequently the focus of innovation rests on the products themselves which overshadow innovations in the company itself (Gourville, 2006; Lepore, 2014; Cusumano, 2013). What really determines the success of a startup is its ability to build sound business practices and plans that set it up for success (Cierpicki, Wright, Malcolm, & Sharp, 2000; Sedighadeli & Kachouie, 2013).

Consistently the narrative of investments in innovative technology does not rely on the technology as the anchor point. Instead, investors look for teams and people who are capable of executing (Cusumano, 2013). They do this because teams who can execute strategies outpace teams who worry about creating strategies. An idea without a team will go nowhere. Therefore, understanding the way that startups develop and execute strategies and also how they develop management structures would lead to a better understanding of how to determine why new entrants are able to compete successfully against established firms.

III. Research Model

The complexity behind innovation warrants a closer look. Technical innovation is the central driver of these firms and is encompassed by two general areas: core concepts and components. They are fundamental to understanding the framework for defining innovation (Clark & Henderson, 1990). Core concepts defines our understanding of how things work. Components refers to the essential parts which are used to create a product.

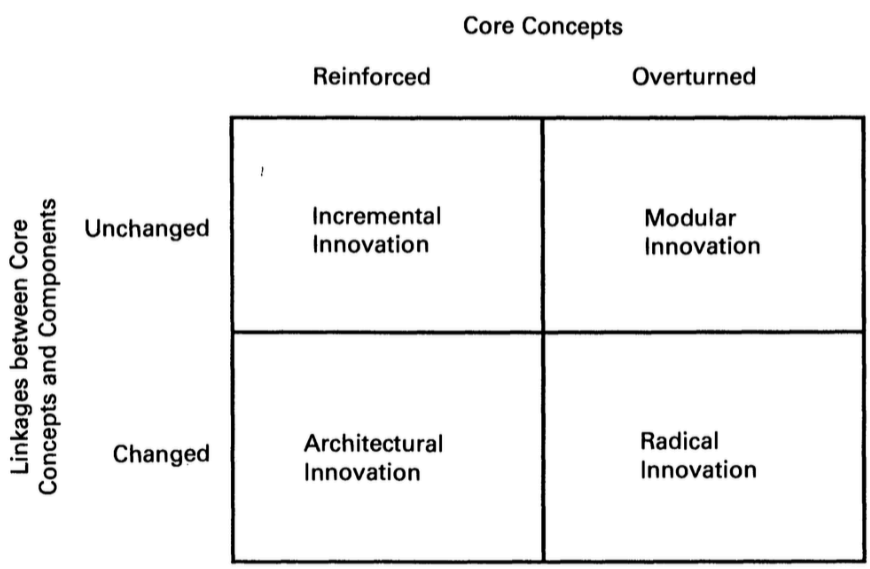

Figure 1 - Differentiating between different forms of innovation (Clark & Henderson, 1990)

The most difficult of the four, radical and architectural innovation have the greatest impact on their respective industries. These kinds of innovation are seldom seen but have far-reaching impact that typically overturns more than one industry. For this paper, we will be focusing on architectural innovation where core concepts are reinforced but the linkage between them is changed. When we understand how a company forms its business around a set of components and core concepts we begin to understand how their product or a service can displace established competitors. The important differentiation to make here is that the success of the company does not rely on the product itself. Architectural innovation instead focuses on the company's understanding of its product as it relates to the market and competition. Usually it takes root initially in simple applications at the bottom of a market and then relentlessly moves up (Christensen, 2012). By changing the bottom of the market small firms can create disruptive products that are so cost affordable and simple that the market evolves and threatens established firms.

An enterprise's job is to maximize shareholder wealth. Architectural Innovation stresses this relationship. Redesigning how a core concept is used or reconfiguring components to adapt their use case is secondary to ensuring organization structuring is achieved. Not only are large firms regimented in their ways but they are also generally unreceptive to new schools of thought. This leads to a complacency wherein an unwillingness to commit or change the existing thought process leads to one of two scenarios. First, the large firm is unable to tailor the experience associated with the product despite being able to manufactured it well. This stems from a hesitance to rewire and rethink the implications of an innovative method. Or second, they get left behind as SMEs carry forward with their innovations and disrupt the space. Inevitably, the large enterprises will attempt to recover their smaller market that has been stolen by the smaller firms.

Innovation is not a game of speed or resources; it is a game of evolutions. Large firms have the resources and connections for both existing and future products. They are well positioned for the expectation of growth and are capable of initiating conversations if needed. The acquisition and possession of materials and resources is not what defines innovation – execution is key. Startups do not have the similar resources on hand that large enterprises process. Instead desperation drives constant change, pushing the company forward. Success is too often paralleled with a small firm's ability to constantly rethink how they are going to execute strategies instead of determining them.

An understanding of the channels, filters, and strategies (fundamental elements for planning and executing architectural innovation) employed by the firm allows us to explore the question of unique knowledge that allows small firms to be successful.

Channels refer to the company's interactions, formal and informal, that are critical to its task (Clark & Henderson, 1990). Whether they be multimillion dollar design contracts or advisors, these resources are vital to the organization. They serve as the backbone for negotiations and business dealings and set the standard for capacity. These channels have traditionally separated startups from being able to compete with large firms. The game of resources has always favored the financially sound giants who set the industry standard. Only recently have these barriers to entry begun to shift as investor confidence is being restored (Porat, 2015). This has allowed startups to be competitive with their channels.

While the cost of resources and connections has been a pain point for startups, the importance of being able to differentiate between relevant and irrelevant channels is a contended one. Filters fulfill this role as they allow the organization to identify immediately what is most crucial in its information system (Clark & Henderson, 1990).

They provide an organizational differentiation between items of relevance and those less important. By being selective and knowledgeable about the needs and wants for new projects, firms are able to optimize their filters. Startups have a significant filter advantage because they are experiencing this innovation from the ground up. Unlike large firms, startups filter their channels as they grow. Large firms may find their ability to gather new information constrained by the filters that they have in place and cannot change, or do not know they need to change. In startups, pertinent filters are formed that are designed to impact the specific needs of a new product or service. This knowledge allows new entrants to build a competitive business advantage that is directed and focused from the ground up.

Strategies dictate the future of a business. Where startups succeed is in their ability to rewire their strategic thinking. Established firms ask how they can get their channels filtered to match their strategies. This process is different in startups because they ask what do they do to get their strategies to channels so they filter them out to find the best solution. They understand their strategies and how they need to get them to the appropriate channels; this application occurs when startups apply appropriate filters to their channels. This knowledge allows startups an advantage because they can focus on product validation as opposed to product testing. The former validates their company's existence because it is well received by their audience while the later serves as proof their product works.

Understanding how startups are able to form their channels, filters, and strategies requires an intimate examination from start to finish. As such this paper borrows case study research practices from Eisenhardt which features a process that is highly iterative and tightly linked to data appropriate for new topic areas as seen in Figure 2 (1989).

Process of Building Theory from Case Study Research

Step	Activity	Reason
Getting Started	Definition of research question	Focuses efforts
	Possibly a priori constructs	Provides better grounding of construct measures
	Neither theory nor hypotheses	Retains theoretical flexibility
Selecting Cases	Specified population	Constrains extraneous variation and sharpens external validity
	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases—i.e., those that replicate or extend theory by filling conceptual categories
Crafting Instruments and Protocols	Multiple data collection methods	Strengthens grounding of theory by triangulation of evidence
	Qualitative and quantitative data combined	Synergistic view of evidence
	Multiple investigators	Fosters divergent perspectives and strengthens grounding
Entering the Field	Overlap data collection and analysis, including field notes	Speeds analyses and reveals helpful adjustments to data collection
	Flexible and opportunistic data collection methods	Allows investigators to take advantage of emergent themes and unique case features
Analyzing Data	Within-case analysis	Gains familiarity with data and preliminary theory generation
	Cross-case pattern search using divergent techniques	Forces investigators to look beyond initial impressions and see evidence thru multiple lenses
Shaping Hypotheses	Iterative tabulation of evidence for each construct	Sharpens construct definition, validity, and measurability
	Replication, not sampling, logic across cases	Confirms, extends, and sharpens theory
	Search evidence for "why" behind relationships	Builds internal validity
Enfolding Literature	Comparison with conflicting literature	Builds internal validity, raises theoretical level, and sharpens construct definitions
	Comparison with similar literature	Sharpens generalizability, improves construct definition, and raises theoretical level
Reaching Closure	Theoretical saturation when possible	Ends process when marginal improvement becomes small

Figure 2 - Process of building theory from case study research (Eisenhardt, 1989)

To get started it was important to ask questions and research the established firms. Exploring why it is possible for startups who have seemingly no chance to compete provides an insight to the challenges they face. It makes the most sense to choose one company for this as an intimate knowledge and analysis can provide a template for future research. On The Wall, Inc. was chosen because it has been well documented since its inception and had no preexisting structure.

The instruments and protocols came in the form of a qualitative analysis of a one year diary kept on the company's decisions and meetings, both internally and externally. Examining the field occurred as overlap amongst the diary pages came forth and different business elements surfaced notably: Hardware, software, marketing, finance, legal, venture capital, equity, management, mentorship, partnerships, Kickstarter, and prototyping. Qualitative analysis of these elements makes the most sense because it opens the way to interpret and understand the logic behind the writer of the notes (Eisenhardt, 1989). By examining the channels, filters, and strategies startups employ with their businesses can we begin to understand how their changing architectural innovation leads them to knowledge that allows them a competitive business advantage.

I use the case study of my company On The Wall, Inc., a startup in the smart mirror business, coupled with research on architectural innovation to explore how the channels, filters, and strategies that a startup employs may result in patterns of thinking that lead startups to gain a competitive business advantage. My research question, therefore, is "How does architectural innovation in startups lead to competitive business advantage over large established firms in the smart mirror market?"

IV. Propositions

Through the research gathered from On The Wall, Inc. this paper seeks to support the early formation of channels, filters, and strategies. Startups in innovative sectors begin with no or very few of these elements and thus develop them differently than established companies. This influences the way they grow and supports the idea architectural innovation provides new entrants a competitive business advantage.

P1: Channels form differently in startups than they do in established companies.

a) Startups do not have vast resources they can draw from initially.

b) Resources come from the interactions the company has with outside influences where they are operating from a position of lesser value.

P2: Themes appear in channel blocks for startups as they focus on channel development.

a) Channels tend to be very focused in groups. These themes are transitioned to filters and strategies to allow the startup to move to establishing new channels.

b) Startups determine the level of importance of channels quickly and those which add little value are either transitioned out or adapted as filters.

P3: Filters are important because they cause companies to focus their channels.

a) As startups grow they strategically design their filters to reflect their channels positively.

b) Filters are relatively unused in startups because they impeded architectural innovation more than they help.

P4: Filters appear less frequently in startup architecture. Startups focus their development on channels as they grow and do not close off their resources permanently.

a) Themes in startups develop time sensitive filters.

b) Filters become less frequent as the organization's strategies become more defined.

P5: Strategies are how companies take advantage of their channels. Startups develop their strategies differently from established firms.

a) The limited channels startups begin with forces them to develop strategies without resources.

b) Strategies without the restrictions of available resources allows startups to explore non-traditional channels.

P6: Themes, while present in a startup's strategies, are much more scattered than their counterparts.

a) If startups form their strategies based on the channels they have they are unable to move forward at an accelerated pace.

b) Startups become more refined with their strategies as they become developed.

V. Research Approach

This research paper will observe the developments of small enterprise called On The Wall, Inc. which is a smart mirror company incorporated in and based out of Oxford, MS. The company shows key performance indicators which point toward architectural innovation within their field. Currently no major company is working on smart mirror technology and as such the market does exist but is largely undeveloped and under explored. Having raised $200,000 in capital the company shares milestones many other successful startups possess.

The research portion of this paper will center around information gathered by the company's chief executive officer. Given the nature of being a startup it is assumed that the CEO is intimately involved with most every decision made by the business. This is an important distinction to make about the information because it will contain multiple interwoven channels, filters, and strategies. Because of this it stands to reason that amidst the day to day operations of the company, time is spent by upper level management sorting and adapting information to fit each of the three and as a result forming the beginnings of the company's history of channels, filters, and strategies.

The information will be gathered and kept in the form of a diary used as a record of the day-to-day meetings the CEO engages in with both internal and external persons (Easterby-Smith, Thorpe, & Jackson, 2008). These interactions will form the qualitative research of the paper and serve as the backbones to determine how linkages in the company's architecture evolve.

The procedure for analyzing the diary was as follow. First, each line was separated into its respective focus. This was aided by assigning certain key elements colors to create a colorized summary of those elements. Furthermore, inputting the data into a searchable schematic allowed for keywords, channels, filters, strategies, and internal and external points to be highlighted to further draw attention to the metadata associated with each memo. Special notes were kept for external correspondences to denote the difference in communication and openness. Accordingly, internal meetings revolved around weekly meetings designed to serve as updates as well as checkmarks for progress made between meetings.

Documentation of the software and hardware development cycle was overlooked for the purposes of this paper in exchange for more detail on the executive and managerial oversight associated with it. In this regard, the nature of the paper distinguished itself from being product focused and examined the architectural innovation associated with starting a technology startup in an unexplored space. This is different because it provided a unique perspective on the creation of a company that is specifically situated around a single product line.

VI. Discussion

Startups inherently exist in a state of disadvantages. From conception to their IPO or purchase there is consistent work against established businesses to distinguish themselves and survive. Because of this narrative of struggle that is so consistent throughout startup stories when these new firms do succeed, often at magnitudes greater than their established counterparts, there is an intense interest in understanding why.

With On The Wall, Inc. the story remains much the same. Limited resources dominated the picture from the very start.

Table 1 - Available resources

Resource	Tangible/Intangible	Theme	Available from Start
Personal Investments totaling ~$30,000.00	Tangible	Financials	Yes
Smart home experience	Intangible	Software	Yes
Entrepreneurship experience	Intangible	Business	Yes
Development tools	Tangible	Software	Yes
Local business connections	Intangible	Business	Yes

A mixture of tangible and intangible resources composed much of the first 6-8 months of the venture. Experienced founders grew the vision of the company from the start taking advantage of the few tangible resources that they did have. These provided the foundation for the channels which would provide the initial decisions that would begin to shape the direction of the Company.

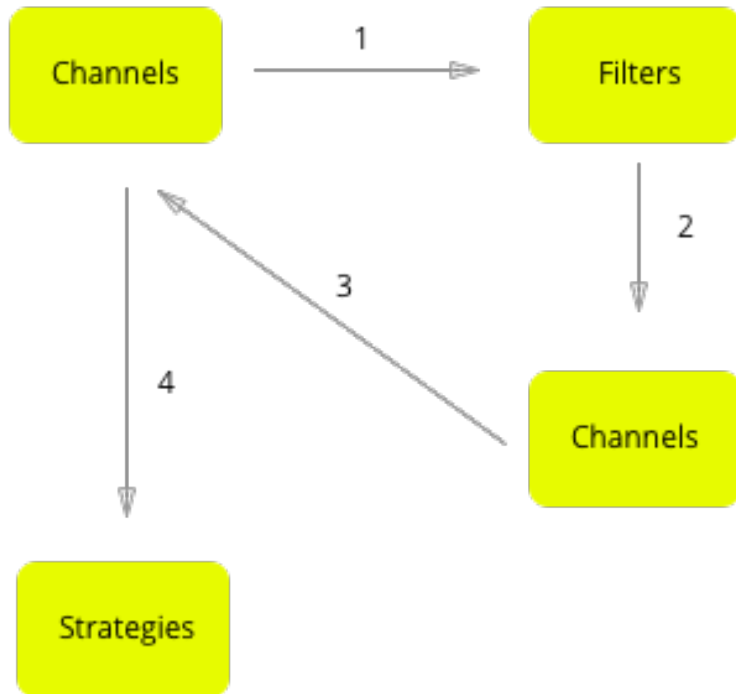

Figure 3 - Channel developments to strategy

The channels which the Company created stemmed from the external relationships it had managed to form with its limited resources. As those channels became more diversified it became necessary to filter those channels and revisit them as necessary, keeping the limited resources honed on the immediate tasks required to maintain relevancy. Unlike established firms where channels already exist startups require to some degree a mixture of search and rescue: search, as in find channels and access them, and rescue, as in save the most important ones for the start without losing track of the ones that have been captured.

It is this methodology which provides startups with an architectural advantage over established firms. By starting from scratch, they are able to strategically spend time searching and acquiring channels which are specific to their needs. Established firms instead spend this time dividing and strategizing which resources they can and/or have to use. There is a lack of freedom that limits the reactivity of the management in these firms.

As these channels become filtered they are redesigned to accompany an evolution of strategy in these startups. This becomes obvious within On The Wall as it developed its legal strategy.

Figure 4 - External legal development

Above, the decision to discuss the provisional patent application filing with an external source, David Sawrie, became a filter for the Company. To acquire value for the Company, focus on creating a competitive advantage through intellectual property changed the strategy for value creation. The channel became the means to capture that value and filters were put in place to ensure that it was prioritized over other business decisions.

We see this channel prioritization again within the Company as it filters its legal structure to focus on agreements and classifications.

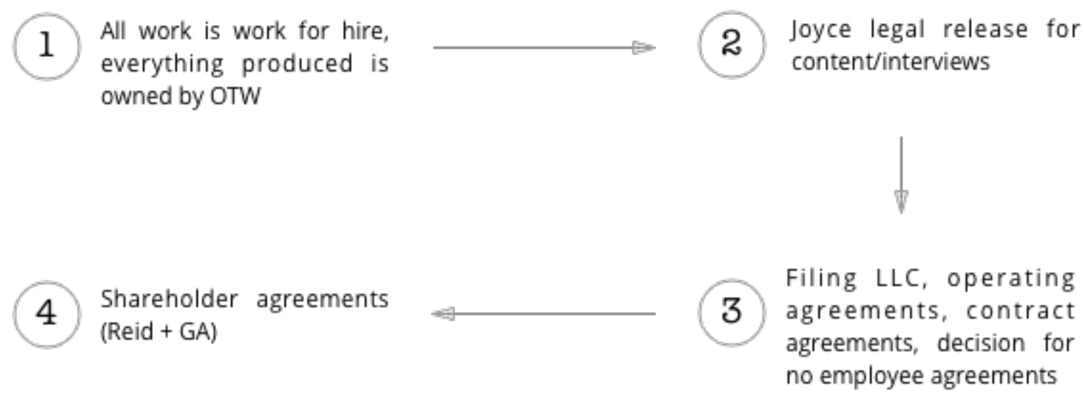

Figure 5 - Internal legal development

These internal channels become focused on moving value and other strategies forward. Ownership and contract developments displayed in Figure 5 impacted strategies throughout the Company. As the channels are filtered and updated they begin to reflect new strategies such as investor relations, hiring agreements, and external relationships.

In startups like On The Wall these channels are essential in developing the company's architecture. Because there is no pre-established way of engaging channels, in part because those channels do not yet exist, there is little confusion as to what new channels are hired to do. Channels which are confusing or add little value are transitioned or filtered to new channels to further influence the company's strategies.

One interesting effect of this innovation is that channels in startups appear in groups associated with themes. As these themes transition through channels to filters and are incorporated into strategies they provide new movement throughout the organization.

Table 2 - Themes in channels, themes for On The Wall, Inc. include law, equity/salary, and financials.

Date	Themes	Notes
2/17/16	Law	- Talk with David and his OS guy about going the open source route and licensing
4/20/16	Law	- Follow-up meeting with UM law, discussions about separating businesses
4/27/16	Equity/Salary	- Talk with Sam about equity distribution amongst initial contractors (brief)
5/5/16	Equity/Salary	- Equity distribution talk again this time focused on difference between OTW and O2E
5/20/16	Equity/Salary	- First talk about Alex consulting
6/14/16	Equity/Salary	- Question about hiring Alex
6/14/16	Financials	- Farris works on pre-order costs +parts with Alex and developing a strategic accounting plan
6/16/16	Financials	- Met with Farris to discuss what accounting software we were going to use
6/16/16	Marketing/Website	- Work with Georgia on marketing and predictions
6/16/16	Financials	- Accounting goals

This theme grouping throughout the formation of channels for the Company indicate that there is a level of focus that dictates the importance of the strategies they compliment. While established firms may have more experience with managing themes as they appear, what separates startups is their awareness of how to prioritize the limited resources they have. In doing so they create a strategic advantage regarding their overall goals which allow them to move quickly and precisely from theme to theme. This specificity is the key to distinguishing the importance of various channels to overall company strategies.

Table 3 - Themes in channels cont. include relationships

Date	Themes	Notes
10/25/16	Law	- Got a message from Danny about the agreement - Email NunoErin and bcc Joyce – suggestions w/ red line - Changes made clear that Alex is a separate party - Business opportunity agreed upon
11/3/16	Relationship	- $100K VC, 110 corporate partners, don't take equity, pre-seed to a VC, no need to be on site, business development, 100-150 companies selected, Perseus mirrors is in their current batch
11/8/16	Law	- Sam's illnesses affecting timeline
11/23/16	Financials	- Advice on financials on how to explain it to another business person
11/23/16	Relationship	- Look for someone to manage an IT project
11/29/16	Relationship	- NunoErin – progress/timeline on the project they gave us, what are we doing with them
11/29/16	Marketing/Website	- Conversation with Georgia about design experience
11/30/16	Prototype	- Alex's work for hire – CAD drawings
11/30/16	Marketing/Website	- Alex's work for hire – website contribution/app presentation, content contribution/creation
12/2/16	Competitions	- Carolina Crews – Times AR/VR Top 100 - Mark – advisory board recommendations
12/8/16	Relationship	- Call with Georgia setting her up with a marketing advisor
12/8/16	Relationship	- Call with Farris setting him up with a CPA advisor
12/8/16	Relationship	- Drive over and meet Carolina – Time Magazine's AR/VR woman

The aforementioned channels and the strategies which resulted from their development led the way to new channels which helped prolong the life of the Company. Specifically, we see that there is a new theme which dominates the later part of the year which was not present at the beginning. The inclusion of new partnerships and relationships later is a continuation of the channels from the beginning of the year. Similar to the channel definition the Company enjoyed relative to its competitors this freedom to pick and choose partners is another benefit shared by startup architecture that is not present in established firms whose commitments to existing partners jeopardizes this freedom.

As startups grow they strategically design their filters to reflect their channels positively. In doing so they are very selective in their implementation.

Table 4 - Selective filter implementation

Date	Filters	Notes
1/4/16	ReflektOS	- REST architecture being scalable/cheap
1/27/16	Law	- Meeting with UM law students about owners of company and taxes
2/17/16	Competitions	- Plan to submit for the competition if possible despite two paths
4/20/16	Law	- Filing LLC, operating agreements, contract agreements, decision for no employee agreements
5/20/16	Law	- Business documents needed
6/14/16	Kickstarter	- Mandatory 8 weeks of planning for Kickstarter, shooting for 60%
6/14/16	Marketing/Website	- Have Alex work on front end web design with Reid

As was the case for On The Wall, filters were not frequently implemented in the first six months. When they were, they were the result of the channel evolution previously discussed. These filters served to help the Company focus on its channels.

Filters remain relatively unused in startups, however, because they impede architectural innovation more than they help. As strategies become more dominant and established and the search for channels takes over the narrative for the CEO filters fall to the wayside. A logical explanation for this is that as the startup becomes better equipped to implement channels the need for filters cease to become an overarching architectural concern and start to see a rise in departments and individuals. On The Wall saw this move. Later adaptations of filters slipped away from overarching strategies and were applied to individuals. Individuals fulfilling marketing, financial, and product design work were tasked with jobs to work towards their department's specific goal. Marketing was filtered to benefit the Kickstarter, see Table 5. Financing was limited to tax preparation and budget tasks, while product design was tasked with external relations related to finishing the prototype, see Table 6.

Table 5 - Limitations of filters, Kickstarter

Date	Filters	Notes
8/23/16	Kickstarter	- Basic questions, standout project, rewards, funds, promotion, communicating with backers, fulfillment, Perseus Mirrors Kickstarter campaign, PanL, Adept, Smart Mirror, DoodleVU, Senic - , campaign timeline, campaign promotion, campaign materials, campaign page, the campaign
8/26/16		(empty)
8/29/16		(empty)
9/1/16		(empty)
9/8/16		(empty)
9/11/16		(empty)
10/20/16		(empty)
10/25/16		(empty)
11/3/16		(empty)
11/8/16		(empty)
11/11/16		(empty)

Table 6 - Limitations of filters, product design

Date	Filters	Notes
12/23/16	Prototype	- Alex – meeting with NunoErin 1/3, 1/10, 1/17, case ready for printing 1/18, printed case 1/19, finish iterations of case 1/26, metal version of case 1/31
1/23/16	Kickstarter	- Film Kickstarter 2/1 – 2/15, launch Kickstarter 2/15
1/10/17		(empty)

1/13/17		(empty)
1/19/17		(empty)
1/20/17	Law	- Joyce legal release for content/interviews
1/25/17		(empty)
1/27/17		(empty)
2/1/17		(empty)

Filters for this reason become much more time sensitive for startups as time progresses. Whereas firms with track records are capable of filtering their productivity and strategies from the beginning, this becomes a learned skill throughout the company's architecture as the new firm matures. During this maturation, the organization's strategies become much more defined and filters are applied to departments and individuals and away from the overarching strategies of the company.

The limited channels startups begin with are impetuses for them to begin developing strategies to capitalize on resource acquisition, often with multiple strategies in mind. On The Wall, Inc. recognized its lack of resources from early on and made efforts to maximize its ability to acquire new channels.

Table 7 - A strategic start to capitalize on future opportunties

Date	Strategies	Notes
1/4/16	Marketing/Website	- Business cards for future meetings
1/9/16	Competitions	- Discussion about presenting business for CIE competition

1/28/16	Competitions	- Continued development for the business competition
2/8/16	Marketing/Website	- Logo design, first OTW design

These strategies lined up On The Wall for expanding into channels which provided value to them. From business meetings and future competitions to establishing a consistent image, both online and offline, these initial strategies focused on innovating channel creation. Unlike established firms whose strategies will revolve around expanding or implementing existing channels into new innovations, every strategy for startups is designed with the new company in mind from the ground up.

This limitation also lends itself to startups exploring non-traditional channels to expand their resource pool. On The Wall looks to explore Kickstarter, an online crowdfunding platform, to capitalize on marketing and exposure that it would not have access to without large funds of capital to spend on marketing, surveys, and production runs.

Table 8 - Kickstarter strategy

Date	Strategies	Notes
2/17/16	Kickstarter	- Talks about launching a Kickstarter led to discussions about creating a prototype
5/20/16	Kickstarter	- Discussions about a makeup mirror for Kickstarter

These non-traditional platforms require a different architecture than what established firms are used to. As such new entrants are often more aware of these platforms than their counterparts and use them much more frequently to unlock channels they would otherwise be foreign to from their starts. Because of this they develop their strategies to reflect goals and opportunities which are relevant to taking advantage of these channels.

Another feature of the way that startups develop their strategies is that they are often constructed with the understanding that the channels will come later. The limited resource approach forces startups to develop strategies that are acutely aware of their absence. A result of this is that they create new strategies or design filters to ensure that those channels are fulfilled. For On the Wall, Inc. examples of these strategies can be found in Table 9 where plans for Kickstarter and sales have already been implemented without a physical prototype or operating system to distribute. This led them to pursue avenues to expedite the production process and filter the work done by individuals to capture the most important channels necessary to fulfill these strategies.

Table 9 - Strategies that lack channels

Date	Strategies	Notes
6/14/16	Marketing/Website	- Start prefacing Georgia to work on marketing strategy for NotisMe
6/14/16	Marketing/Website	- Reid works on both websites
6/14/16	Kickstarter	- Plan for the Kickstarter is to have a makeup mirror for sale for $300-400
6/14/16	Prototype	- By summer have a prototype finished to show off to investors
6/14/16	Financials	- Aim to raise $100K + VC with video
6/14/16	Prototype	- Have a demo done by mid-July

6/14/16	Prototype	- Prototyping firm said they can make the first makeup mirror for $50-75K

Yet as these strategies became more refined and focused their structure seemed to dissipate. On The Wall, as it became more developed from a managerial perspective, implemented more strategies to deal with its growing pains. The CEO observed these changes through the legal portion of the company.

Table 10 - Shift in legal strategies

Date	Strategies	Notes
6/19/16	Law	- All work is work for hire, everything produced is owned by On The Wall
6/21/16	Law	- Open source MIT license code for On The Wall

As the company grew the strategies corresponding with work for hire, production, and licensing became much more scattered. What had previously only been a strategy focused on acquiring a patent and structuring a business was now transformed to focus on solving the branches which grew from those solutions but also the continuation of the other strategies which had been adopted by the other individuals working for the Company. The Company shows a fluidity here that aptly deals with the architectural finesse required for consistent growth. The pivots occur naturally throughout firm growth but the difference here is that new entrants are able to use the knowledge they learn along the way to tailor their organizational responses to hone the company towards its end goal.

VII. Limitations

This research paper experienced a couple of limitations which would be of interest to consider further. Given the brevity of the research and the timeframe proposed there was no possible way for the researchers to follow the growth of On The Wall, Inc. through to its end. However, this is the nature of working with a startup from its inception. For this reason, it would be beneficial for future readers to conduct their own research on the Company and compare the current state of On The Wall, Inc. to what is presented here in this paper.

Furthermore, this paper conducts itself solely from the view of the CEO of the On The Wall team. As is the case with this it must be assumed that his literature is biased and recollected of his own perspective and not that of the rest of the team. This presented a unique, unblemished insight into his thoughts and decisions for the company. Future researchers on this topic would do well to collect more diaries which would inevitably produce more views and hopefully a better insight to the channels, filters, and strategies prevalent throughout the entire organization.

Another noted limitation of this research is the nature of the work and focus the CEO put into the diary and the Company. That is to say that the CEO at the time of this research was pursuing work with On The Wall in his free time outside of a part-time job and a full-time course load. Similarities with these time constraints exist amongst many startups and add to the novelty of following a startup's CEO. This may have effects on the ability to manage the individuals of the team as well as focus on multiple strategies at once akin to the work a full-time employee might be able to.

An interesting note for future researchers interested in pursuing the topic of startups and the architecture that arises throughout their growth period is the young nature of the startups. The average age of the On The Wall team was 21 at the time this research was collected. It is safe to assume that there was a lack of work force experience which would be attributed to work done at established firms for lengths lasting longer than one year. In part this is what made examining On The Wall interesting as the architecture and decisions which were made were crafted in the middle of learning and often from intuition as well, however, this knowledge acquisition is part of most narratives of startups. I do not think that it detracts from the validity of this research merely poses an interesting question as to whether age or industry experience affects the knowledge which is able to be capture by startups.

VIII. Conclusions

In conclusion, I have provided an illustration of the mechanisms of architectural innovation that lead to knowledge that allows new entrants a competitive business advantage. The advantages that established companies have is superior, but the complexity it creates in the innovation process provides an opportunity for new entrants to surface and be competitive.

Where new entrants struggle to gain access to channels which are closed to them they gain a tactical advantage in the freedom of choice and strategy to pursue the most immediate benefactor. Established firms are often bound to existing partners and relationships which hinders their ability to freely do business and the limitations associated with doing business elsewhere or even in a different way impacts their ability to be reactive and innovative in a new industry that expects its competitors to be exactly that, but there are benefits. These partners often carry with them exclusive deals and developed relationships which account for rapid movement and profitable industry connections.

When new firms are able to quickly change the way they innovate and manage themselves they are able to consistently handle new problems quickly and efficiently allowing them to accelerate throw the learning phases associated with growing in an industry, existing or new.

New entrants' ability, then, to filter their channels and strategies is somewhat unprecedented. Filters do not particularly exist because these startups need to be open to everything at a moment's notice. As an alternative, these firms adopt strategies throughout their organization to act as filters in place of traditional filters. This allows individuals to focus their work without limiting it to specific channels or strategies where established firms will set filters on work, relationships, and individuals. This relationship between a strategy that guides versus a strategy that constrains sits at the core of the strategic direction all firms take.

Definitively the greatest strength that these new entrants have is their ability to be reactive. As they grow their ability to be reactive increases but also becomes at risk for being overwhelmed by filters and strategies that attempt to quell the organizations ability to be reactive. By taking advantage of their unique architecture they can respond and move about their industry much faster than their competitors and it is this knowledge of how to move and how to be a new entrant that gives them their competitive business advantage.

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