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LUMINAR: LEVERAGING BIG DATA USING CORPORATE ENTREPRENEURSHIP

R. Chandrasekhar wrote this case under the supervision of Professor Simon Parker solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

It was early March 2012 in Santa Monica, California. Franklin Rios, an independent digital marketing professional, had come out of a meeting with Walter Ulloa, founding chairman of Entravision Communications Corporation (Entravision), a Latino-focused broadcasting company, at its head office. The two had known each other for nearly two decades and were meeting more frequently of late.

Rios had just secured Ulloa's agreement to set up a data analytics division at Entravision. To be known as Luminar, it was to focus on leveraging Big Data. Rios and Ulloa had also reached a common understanding on the basics of executing a growth plan for Luminar.

Said Rios:

> I have five areas of concern going forward. First, how do I secure internal buy-in? Building a support base at Entravision will not be easy because analytics is not part of the company's DNA. Second, what is the structural fit, if any, between Luminar and Entravision — and what are the advantages and disadvantages of Luminar operating as a division of Entravision rather than as an independent venture? Third, what sort of performance milestones make sense for Luminar to set itself? Fourth, how do I leverage Big Data at Entravision? What novel commercial opportunities could Luminar exploit, and what sort of clients could we attract? Finally, how do I sustain a first mover advantage for Luminar? Can I build high entry barriers for competitors who will be drawn to our business model?[1]

U.S. BROADCASTING INDUSTRY

The global media industry, comprising four categories of broadcasting and television (TV), publishing, advertising, and movies and entertainment, was valued at $886.1 billion in 2012. The U.S. media industry

[1] *Based on an interview with Franklin Rios, Denver, CO, on March 6, 2014.*

was the second largest, at $255.1 billion, and was forecast to grow at a compound annual growth rate (CAGR) of 2.3 per cent till 2017[2] (see Exhibit 1).

Within the U.S. media, broadcasting and TV was the largest category at $142.6 billion. It consisted of all terrestrial, cable and satellite broadcasters of both digital and analog TV programming. Its major players included Comcast (which owned channels such as CNBC), News Corporation (Fox News), Time Warner (CNN), Viacom Inc. (MTV), Walt Disney (ESPN) and CBS Corporation (CBS News).

The broadcasting industry was regulated in the United States by the Federal Communications Commission (FCC). The role of the FCC was to promote competition and encourage the best use of spectrum.[3]

Advertising was the primary source of revenue for the broadcasting and TV industry. A secondary source was the licensing fee paid by cable operators and subscription fees paid by consumers for premium content. The content was provided largely by production units which a broadcasting company either commissioned or from whom it acquired programming rights.

Broadcasters were competing with one another for viewership, and that, in turn, was driving advertising revenue. They were also competing with other forms of media such as films, video games and the Internet. Social media tools, in particular, were weaning consumers away from radio and TV: 82 per cent of consumers between the ages of 18 to 24 preferred to watch content from sites such as YouTube rather than from TV.[4]

The basis of the industry's advertising driven business model was being eroded on several fronts. There was progressive consumerization of technology. Products such as Hopper enabled viewers to skip commercials while watching recorded programs. Content creation was getting localized, adding to costs. The audience was fragmenting. Media buying houses were consolidating, gaining clout over allocation of spending on advertising. The switch from analogue to digital TV broadcasting, mandated by the FCC to be completed by June 2009 for full-power TV stations, had not only increased costs for existing players but freed up frequencies for digital broadcasting, enabling new players to come in. Digitization had led to more channels, and that led, in turn, to multiple streams of programming, referred to as multicasting.

Broadcasters were responding to the challenges in several ways. They were customizing the content to viewer needs and making it interactive. They were crowd-sourcing the content as a way of reducing costs. Some were identifying new streams of revenue by charging an additional fee for retransmission of content by cable operators. Some were proposing a feature that would allow a viewer to order a product in a commercial with the click of a remote.

Said Rios: "There are three key success factors in the broadcasting industry: generating relevant programming, having a clear market position and keeping pace with new technologies."

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[2] "Media in the United States," Market Line Industry Profile, April 2013 http://advantage.marketline.com.proxy1.lib.uwo.ca/Browse?nav=4294853722+4294855255, accessed March 31, 2014.
[3] www.fcc.gov/what-we-do, accessed April 4, 2014.
[4] "Social Media on TV Survey," Accenture 2012, http://newsroom.accenture.com/images/20020/Social%20Media%20On%20TV%20Survey.pdf, accessed March 31, 2014.

LATINOS IN THE UNITED STATES

The term Latino referred to an origin and ethnicity, not a race. The Latino market was not homogenous. Although the majority was of Mexican heritage, it consisted of subcultures from over 20 countries in Central and South America and the Caribbean. Their members were held together by the language they spoke — Spanish. But their beliefs, opinions and behaviour patterns varied with the country of their origin.

There were 52.4 million Latinos in the United States in 2012, accounting for 16.9 per cent of the total U.S. population (see Exhibit 2). By 2030, they were forecast to grow to 85 million, comprising 23 per cent of the U.S. population. Latinos, the largest minority group in the United States, were growing at eight times the rate of the non-Latino population. According to an estimate by market research agency Nielsen, while the overall U.S. population would grow by 42 per cent by 2050, the Latino population would grow by 167 per cent (see Exhibit 3).

The Latino buying power — more than $806 billion in 2010 — was expected to go up to over $1.0 trillion by 2015 and $2.0 trillion by 2025.[5] The per capita income of U.S. Latinos was higher than any of the BRIC (Brazil, Russia, India and China) economies. The number of U.S. Latino households earning $50,000 or more per annum was growing at a faster rate than the number of total households in the United States.[6]

Latinos defied the conventional wisdom characterizing the U.S, marketing paradigm that all immigrants would shed their native cultures and blend into the U.S. melting pot sooner or later. Latinos carried their indigenous ancestry as a source of differentiation wherever they went. They were on the path of "acculturation," as it was referred to, rather than of "assimilation." Instead of discarding their native identity, generations of Latinos, old and new, integrated it with the dominant identity of the United States, their host country. They were leading dual lives.

Although Latinos represented nearly 17 per cent of the U.S. population, they formed only 6 per cent of the total marketing pie as an audience.[7] This was for two reasons: first, traits unique to Latinos pushed them under the radar of market researchers. For example, many shopped in small inner-city stores that did not scan items and preferred cash to credit card payments. Second, the fault lines in traditional market research itself relied on sampling techniques focused on qualitative data.

Although an average U.S. Latino household had less disposable income than the average U.S. household, it spent 7 per cent more per year than the average U.S. non-Latino household on food at home, 80 per cent more on children's clothing, 48 per cent more on footwear, 29 per cent more on laundry and household cleaning products and 23 per cent more on mobile telephones.[8]

Said Rios:

> The overall American population is graying but the Latino population is young — with over 60 per cent under 35 years of age and 75 per cent under 45 years. The demographic profile of Latinos is providing a boost to several economic sectors in the United States such as real estate

[5] *Entravision 2012 Annual Report.*
[6] *www.nielsen.com/us/en/reports/2012/state-of-the-Latino-consumer-the-Latino-market-imperative.html, accessed March 31, 2014.*
[7] *http://sloanreview.mit.edu/article/video-leveraging-analytics-to-transform-a-traditional-broadcast-business/ 4:35, accessed March 25, 2014*
[8] *Entravision 2012 Annual Report.*

(particularly residential), food (grocery and restaurants), retail (especially clothing and electronics), education (higher education and technical schools), financial services (personal loans), transportation (automotive and airline) and entertainment (particularly ethnic programming).

ENTRAVISION

Entravision was a Spanish-language media company focused on Latinos as its core segment. It had 56 TV stations and 49 radio stations in 2013 that reached audiences in the United States through mobile, digital and other interactive media platforms. Entravision had replaced Univision in 2007 as "the largest independent public media company focused principally on the U.S. Latino audience"[9] when the latter was acquired by a private equity consortium. The two companies had an ongoing partnership wherein Univision was a source of programming for Entravision's TV broadcasting business.

Entravision had generated revenue of $223.3 million for the year ending December 2012 with an operating profit of $76.7 million (see Exhibit 4). The company had two business segments: TV and radio. Both had a common stream of revenue in the sales of national and local advertising time. TV had an additional stream: retransmission fees from multichannel video programming distributors (MVPDs).[10] The TV segment not only had a higher share of revenue but also a higher margin of profitability.

The company had nearly 1,000 full-time employees, more than 75 per cent of them in the TV business. It had a market share of 74 per cent in the "TV prime time audience of adults 18 to 49 years of age."[11]

Entravision was facing competition in both TV and radio for viewership and revenue at both national and local levels. In TV, its competitors were the local affiliates of TV Azteca, the second-largest producer of Spanish-language programming in the world, and also of Telemundo, the Spanish-language TV network that had been part of NBC Universal since 2002. They also included the local affiliates of the four principal English-language TV networks — NBC, ABC, CBS and Fox — and, in some cities, the CW network. In radio, its competitors were Univision (whose partnership was limited to TV), Clear Channel Communications and the Spanish Broadcasting System.

More than $5.7 billion of advertising was placed in Spanish-language media in 2011 in the United States.[12] On a broader plane, Entravision was also competing for attention with Spanish newspapers, magazines and other general forms of entertainment including mobile media devices.

Entravision offered advertisers the ability to reach potential customers through a combination of TV and radio. Its cross-selling helped create synergies and achieve cost savings both for itself and its customers. The company had traditionally used surveys from third parties as a basis to measure its viewership and to determine, in turn, its advertising rates.

Promoting community involvement and creating local content were the cornerstones of Entravision's growth strategy. The company was building customer loyalty and brand identity through appearances at local gatherings and concerts and also through tie-ins to major local events.

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[9] Entravision 2012 Annual Report, p. 2.
[10] MVPDs were intermediaries distributing cable TV and satellite TV programming to individual households. They would pay a programming fee to broadcasters and collect a subscription fee from consumers. The content of programming would be customized or aggregated.
[11] Entravision 2012 Annual Report, p. 4.
[12] Entravision 2012 Annual Report, p. 3.

Said Rios:

> The company's competitive advantages include Latino focused programming which is further fine-grained to the needs of individual communities. The programming for Cuban Latinos, for example, is different from the programming for Puerto Rican Latinos. The local nature of news and features has helped build Entravision's brand identity as a broadcaster that is close to its customer. Its other competitive advantage is that its media assets are located in geographical areas which are both densely populated and fast growing. Entravision has broadcasting stations in 15 of the 20 highest density Latino markets in the United States and 14 of the 20 fastest growing Latino markets in the United States.

See Exhibit 5: Entravision — Geographical Footprint.

BIG DATA

McKinsey defined the term Big Data as "data sets whose size is beyond the ability of typical database software tools to capture, store, manage and analyze,"[13] while Gartner defined it as "high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making."[14] Deployment of Big Data facilitated the analysis of large pools of information originating from disparate sources in order to identify patterns and trends on which managers could make informed decisions.

The beginnings of Big Data could be traced to a study that announced the imminent spread of influenza across the United States. Published in November 2008 in a science journal, the study had been conducted by a team of researchers from Google and Yahoo, both technology firms that had nothing to do with medicine.[15] Although the team had merely discovered a trend in what people were rummaging on the Internet with their computers by keying in search terms such as "pharmacies near me" and "flu symptoms," its findings were precise. The team had taken the top 50 million searches and let the algorithms come into play. It took less than a day to come up with the results. Its findings were faster than the Centers for Disease Control and Prevention (CDC), the official agency, which was only using past events (such as medical treatments provided) to compile its periodic health data.[16]

Big Data differed from conventional tools of analytics such as data warehousing (DW) and business intelligence (BI) in four ways: volume, velocity, variety and value.

The volume of data processed in typical DW and BI installations were measured in terabytes (i.e., 1,000 gigabytes), whereas Big Data dealt in higher units of measurement: petabytes (1,000 terabytes), exabytes (1,000 petabytes), zettabytes (1,000 exabytes), yottabytes (1,000 zettabytes), brontobytes (1,000

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[13] James Manyika et al., "Big Data: The Next Frontier of Innovation, Competition and Productivity," McKinsey Global Institute 2011 www.mckinsey.com/.../Technology%20and%20Innovation/Big%20Data/M, accessed March 15, 2014.

[14] www.gartner.com/it-glossary/big-data.

[15] "Web Data Predict Flu," Nature 456, November 20, 2008, www.nature.com/news/2008/081119/pdf/456287a.pdf, accessed March 24, 2014.

[16] Four years after the original Nature paper was published, Nature News had different tidings to convey: the latest flu outbreak had claimed an unexpected victim: Google Flu Trends. After reliably providing a swift and accurate account of flu outbreaks for several winters, the theory-free, data-rich model had lost its nose for where flu was going. Google's model pointed to a severe outbreak, but when the slow-and-steady data from the CDC arrived, they showed that Google's estimates of the spread of "flu-like" illnesses were overstated by almost a factor of two, www.ft.com/intl/cms/s/2/21a6e7d8-b479-11e3-a09a-00144feabdc0.html#axzz31F34St6i, accessed March 29, 2014.

yottabytes) and geopbytes (1,000 yottabytes).[17] By way of comparison, one petabyte was the equivalent of paper text that required a storage capacity of 20 million filing cabinets of the kind used in an office.

The velocity of Big Data installations was such that it supported real-time, actionable processes. A retailer, for example, could use geo-location data from mobile phones to ascertain how many customers were in its parking lot on a particular day and estimate the potential sales for that day even before the sales were recorded.

The variety of sources from which Big Data could be mined included not only structured data such as database tables, but also unstructured data originating from mobile phones, social networks, sensors, video archives, radio frequency identification (RFID) chips and (global positioning systems (GPS). Any data that could be captured in a digital form and tracked through networks had potential for being processed by Big Data tools.

The value of Big Data lay in the ability of specialized information technology experts to derive benefits from the uniquely rich and fine-grained nature of the data to generate new market insights and deliver business impact and sustained value for clients.

The popularity of Big Data had increased since 2009 for several reasons. First, there was a growing recognition that all data had value. If particular data appeared to have no value, it was only because they had not been mined enough or because their value had not yet been properly understood. For example, few had sensed the potential when Google first started harnessing satellite imagery and capturing visuals through an application it subsequently called Street View.

Second, computing costs were dropping on all parameters, including memory, storage, bandwidth and processing. For example, the cost of storing a terabyte of data was $1 million in the 1970s but only $50 by 2010. The fall was being fuelled by new technologies like cloud computing.

Third, Big Data had enabled companies to make customized offerings to individual consumers, resulting in increased loyalty. For example, online retailer Amazon had leveraged Big Data to improve the quality of its customer service. It had drawn up customer profiles that were not only detailed but also instantly accessible to its customer service professionals on their computer screens, enabling them to solve customer problems quickly and satisfactorily.[18]

Fourth, Big Data processing was faster than traditional approaches, because it was designed to "take the code to the data" rather than "take the data to the code." Moving one petabyte of data, for example, through one gigabyte of network was time-consuming, messy and often downright impossible. On the other hand, taking the code to the data was easier. It also unveiled a range of possibilities, such as modeling an entire population rather than samples and building superior algorithms with better predictive ability.[19]

Big Data had already become a source of value for many industries. In airlines, for example, it helped identify travel patterns in advance and interpret them to develop what was known as "smart pricing." In financial services, it helped detect frauds in real time (as they were being committed). In the automotive industry, it helped analyze warranty claims to modify manufacturing systems and improve product

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[17] *www.whatsabyte.com.*

[18] *www.fastcodesign.com/1669551/how-companies-like-amazon-use-big-data-to-make-you-love-them, accessed March 15, 2014.*

[19] *Mehta Abhishek, "Big Data: Powering the Next Industrial Revolution," http://cdnlarge.tableausoftware.com/sites /default/files/whitepapers/big-data-powering-next-industrial-revolution_2012.pdf?tabsrc=lp, accessed April 10, 2014.*

development processes. In utilities, it helped forecast peak demand. In health care, it helped reduce the costs of delivering medical services. A report from the McKinsey Global Institute[20] had estimated that the U.S. health care system could save $300 billion per annum — $1,000 per American — through better integration and analysis of the data produced by clinical trials and health insurance transactions.

Said Rios:

> Big Data brings accuracy and rigour of information to decision makers. It reduces the risks of indecision. Rather than rely on intuition, and likely make errors of judgment, managers have tangible data to work on. Big Data ensures that managerial decisions are grounded in reality.

LUMINAR

Having left Nicaragua in 1982, Rios was working with a subsidiary of Univision in Los Angeles as a broadcasting traffic assistant during the mid-1980s, providing administrative support in execution of programming. It was there that he met Ulloa who founded Entravision in later years but was managing Univision's media assets in California at the time. Even as their careers took them in different directions, the two had stayed in touch.

As a media professional who had set up a Spanish-language advertising agency specializing, among other things, in database marketing, Rios was tuned to the role of opinion polls and conventional market research tools in determining viewership. He recognized that these tools had three limitations: sample error, sample size and sample bias.

Sample error happened when the sample chosen did not reflect the population under review. A sample of non-smokers, for example, would be out of place in a survey of smoking habits. Sample size error happened when the size was either too small (leading to inaccurate results from extrapolation) or too big (leading to outdated results due to time delays). A voter registration list, for example, was a sampling source that, in its very nature, excluded a large swathe of the population. Sample bias happened when the sample was *not* chosen at random. A non-representative sample precluded valid inference about the population since it related disproportionately to an over-represented group.

The search for alternatives had led Rios to Big Data. The process he envisioned involved building, as the first step, a database of U.S .adults (numbering 140 million) and a subset of Latino adults in the United States (numbering 37 million). These were part of what was known as structured data. Also to be extracted would be "unstructured" data that did not fit into any predictable pattern from social media tools such as blogs, tweets and YouTube. Together, it would generate, from preliminary reckoning, about 125 terabytes of living, breathing data which could be analyzed in real time. In total, Rios reckoned that he could combine some 2,000 distinct and rich datasets, containing an unprecedented multi-dimensional data resource.

As part of the second step, the data so collected would be ingested into Hortonworks,[21] an open source platform with the capacity to process 140 million adult records in 48 hours. The platform consisted of a parallel cluster of low-cost commodity servers, each containing a local disk to hold a subset of data as well as a central processing unit (CPU). It worked on an algorithm, known as MapReduce that performed

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[20] James Manyika et al, "Big Data: The Next Frontier for Innovation, Competition and Productivity," May 2011 www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation, accessed April 10, 2014.
[21] http://hortonworks.com/, accessed April 16, 2014.

four sequential processes: "reading" the data from the disk, "mapping" the data by applying a variety of filters, "reducing" the data by summarizing it in specified ways and "writing" results back to the disk. The algorithm cut processing times dramatically. It took a conventional platform six hours to process one petabyte of data. MapReduce did that in 30 minutes.[22]

The objective of Hortonworks was to ensure that the right records and the right transactions were appended to the right consumers and, by extension, to the right households. It would be done simultaneously for both Latino and non-Latino groups to arrive at a basis of comparison. Professional analysts would then start interrogating the Latino data to profile consumer types and identify their consumption patterns. They would deploy algorithms to profile consumer types with a high degree of precision. The profiles would thus be based not on self-reporting as in a poll, but on what, why and how people were consuming at the grassroots. The resulting data would help advertisers and marketers make informed choices in targeting customers for their product promotions.

Rios planned to hire a team of data analytics experts in South America – who were highly skilled but much cheaper than their North American counterparts – and put them to work on compiling and analyzing Big Data for the United States, which would be stored in the cloud. Rather than purchase his own expensive servers with a large capital expenditure outlay, Rios realized it would be more cost-effective to lease server capacity from Amazon, which would entail an ongoing but much more modest stream of operating expenditures. Rios felt comfortable that Amazon's personal security and data protection certification standards would provide the necessary integrity and legal safeguards. However, Rios had initially to decide whether to approach venture capitalists to finance the operation as a stand-alone entrepreneurial venture, or whether to seek a larger corporate partner and execute his plan via a corporate venture instead.

The search for alternatives also led Rios to his mentor Ulloa. As chairman of Entravision, Ulloa was willing to provide Rios with a platform where he could work on his vision and develop a business model. Entravision would be committing funds for the launch of the Big Data initiative and its growth. In the first year, it would provide $4 million towards procuring data analytics hardware and human capital. In the second year, it would invest about $1.5 million, mainly to cover operating costs, and in the third year, it would provide a high single-digit million. Entravision would also authorize up to $50 million in a war chest for strategic acquisitions to turbocharge Luminar's growth.

The understanding with Ulloa was that as long as Luminar delivered a strong topline performance, Entravision would continue to invest in Luminar. Ulloa's own interest in the launch of Luminar was driven by four objectives. He was keen that Entravision should transform itself from a media company into an information and analytics company; Luminar would be the centrepiece of such a transformation. As the founding entrepreneur of Entravision, he was interested in opportunities enhancing business synergies, and he believed that the new data driven approach of Luminar would complement the traditional survey driven approach of Entravision. He was also keen on revenue growth and was convinced that Luminar would prove to be, in the long run, a new revenue stream for Entravision.

Rios was planning to develop three specific products at Luminar aimed at blue chip marketers and advertisers who were Entravision's customers. The customers were themselves looking for competitive advantages and the new products were designed to help them in that direction.

The first product would be Analytics. It would unveil market possibilities for clients that they would not have thought about. It was important, as Rios saw it, not to sell the data, per se, to clients. Luminar would,

[22] *www.cs.utexas.edu/~pingali/CS395T/2012sp/lectures/MR-nikhil-panpalia.pdf, accessed May 1, 2013.*

instead, leverage its expertise and knowledge about the Latino market for these clients — for a consulting fee. Luminar would interpret the data to help clients target their customers better, rather than give clients an unstructured data sump for which they lacked the expertise to interpret on their own.

A service that could "cookie-tize" offline transactions data would be the second product. Most consumer purchases were offline, particularly in grocery stores, restaurants and shopping malls. By compiling data, for example, on coupons whose location of delivery could be matched with data associated with geographically pinpointed online household IP addresses, this service could expand the scope of data collection and merge offline data with online data. The result would be a much richer record of transactions at the household level. It could enable clients of Luminar to expand the scope of their digital marketing.

The third product would be in the realm of social media. Many Latinos were bilingual, which posed problems for conventional algorithms trying to identify which interlocuters were indeed Latinos, let alone identifying their patterns of purchasing intentions. This product would improve the accuracy of social media data, including identifying which speakers were most likely to be Latinos and what was going on in the conversations among different sub-groups of Latinos. Indeed, defining and identifying Latino consumers was a challenging task, and was only becoming more difficult as younger, third-generation, Latinos who predominantly used social media became more prevalent in the Latino population.

HOW LUMINAR PROPOSED EXPLOITING BIG DATA TO ADD VALUE

Rios proposed using Big Data to generate value by providing specialized consultancy services to corporations seeking detailed market research about Latinos. Existing market survey research methods lacked the detail needed to guide corporations about the customer needs of this fast-growing and increasingly valuable ethnic group. Latinos were a diverse, geographically dispersed group of people who often did not show up in official records; yet conventional market research methods were only able to aggregate them into coarse, broadly homogenous groupings. Hence there was an urgent customer need to generate more fine-grained market insights about Latinos.

Rios envisaged the following business model. First, Luminar would contact clients and ask them what unanswered questions they had about Latino purchasing patterns. They would then provide answers, using data that go down to the zipcode, and even the household, level. That level of detail would enable Luminar to help clients solve the classic and long-standing attribution problem in marketing, namely, which advertising pays off and results in new sales. The effectiveness of this service would depend on Luminar's ability to solve the tricky problem of identifying Latino households from its analysis of Big Data.

Second, Luminar could help clients process the data that the clients themselves possessed, both stand-alone and in combination with Luminar's Big Data. That would generate valuable new information that the client companies could utilize in their marketing campaigns.

Third, Rios wanted Luminar to offer client firms additional information and insights about market opportunities, which had not yet occurred to them. For example, Luminar could provide evidence that the client actually possessed a currently unrecognized, untapped and valuable market opportunity if they marketed a particular brand of their product line at particular locations for a given price. Luminar would be able to predict consumer buying patterns by tapping their vast array of data on purchasing patterns for comparable customer segments. Clients helped by these uniquely accurate insights would likely return to

Luminar as repeat customers for more consultancy services as further questions occurred to them about ways they could drive growth.

Initially, Rios knew that he and his team would have to market their services aggressively to clients despite having no track record, especially in the face of widespread ignorance and skepticism about the value of Big Data. However, Rios was confident that as Luminar established success with early clients, word-of-mouth would spread and Luminar's business would grow exponentially. Rios could progressively step back from selling operations and spend more time on planning the growth strategy for Luminar.

For his part, Ulloa anticipated that Entravision stood to benefit from having Luminar as a corporate venture. First, Luminar could provide a valuable new source of revenue and growth which was complementary to Entravision's given the shared focus on its deep understanding the Latino market. Entravision had a strong balance sheet but lacked attractive growth prospects in broadcasting in which it could invest its free cash flow. Second, the Luminar initiative might encourage Entravision to think more digitally as a company, expanding its horizons from a purely media company to a digital media company. Ulloa even imagined that Luminar could be the vehicle for internal transformation of Entravision, if it eventually became large and profitable enough.

ISSUES BEFORE RIOS

The growth target set by Ulloa was that Luminar should generate, within five years, 10 per cent of the revenues of Entravision. The target seemed achievable, given that there was no competitor in sight, so far, and also that Luminar was positioned for Big Data analysis of the Latino community in the United States.

But Rios wondered how he should navigate the way around the immediate issues before him. He did not want to go to Ulloa to seek help in resolving them. He would rather go to him seeking, if necessary, time in meeting the revenue target.

He recalled Ulloa mentioning to him the skepticism that prevailed among employees in 2007 when Entravision had set up a digital division to manage the transition from analog to digital transmission. Notwithstanding the time frame imposed by the FCC to complete the transition, there was a sense of discomfort with the change. The launch of Luminar carried no evidence of a burning platform at Entravision, making the process of securing buy-in that much more difficult. It was compounded by the fact that, in the general perception of employees, quantitative data was not core to the business of broadcasting, which was long ruled by qualitative data.

The resistance would come from three sources, as Rios saw them: research and development (R&D), finance and sales.

For over two decades, the R&D department at Entravision was using the same tools — sampled and self-reported — to compile viewership ratings, which in turn were used by marketing to draw advertisers to the channel's programming. The system was delivering. It was good not only for Entravision but for all broadcasters in the United States, big and small, who were using a template that had become an industry norm. Finance could be won over by the revenue target, but until the sales started trickling in, it would have reservations, particularly over the outflow of cash during the first few months without concomitant inflow. The chief financial officer (CFO) would also be keen to ascertain the metrics of performance for the new division because that was what the analyst community, tracking Entravision as a listed company,

would be keen to know from the CFO. The greatest resistance would be from sales. The salespersons were required to change their messaging from selling advertising time on various programs to selling digital analytics about the kind of audience they would attract.

The second issue pertained to the structural fit between Luminar (as a strategic business unit) and Entravision (as the parent company). As president of Luminar, Rios would be reporting directly to Ulloa. Both recognized the need for Entravision to become a data driven organization. Both saw opportunities for synergies and new revenue streams in the long run. Both acknowledged that Luminar would be a central part of corporate strategy at Entravision rather than an add-on. Luminar would leverage the credibility of Entravision at two levels: as a listed company with corporate governance practices in place and as an enterprise focused on Latinos in the United States.

Rios wondered whether Luminar needed to maintain an arm's-length relationship with Entravision, or whether it should be run as a fully integrated division of Entravision. On the one hand, he could see advantages of Luminar being embedded fully inside Entravision in order to make it a more immediate agent of change in the organization. On the other hand, he wondered about possible conflicts of interest between Luminar and Entravision, which might have adverse effects both internally and externally. Rios was keen to ensure that Luminar was seen as a credible provider of unbiased marketing insights to advertisers. Clearly, a delicate balancing act had to be achieved when structuring the relationship between Luminar and Entravision.

"Performance milestones" were an important part of establishing credibility with not only the customers but also the employees of Entravision. Rios wondered whether the milestones had to be determined from a client-facing perspective or from an internal perspective. Internally, one of the milestones would be the amount of data that would be fed into Hortonworks for processing; another would be the team of professionals being put in place. On the external front, the milestones would be varied. It could be the number of clients signing up with Luminar, the value of sales orders generated, the number of referrals and/or the value added to the clients in terms of their revenues and margins.

Analytics could be leveraged beyond the current clients of Entravision. It could happen at two levels: internal and external. Luminar could deploy its analytical skills to evaluate, for example, the effectiveness of Entravision's sales (in closing deals), HR (in team building) and finance (in tracking cash flows). It could use its ability to measure performance to improve the working of business processes at Entravision. Externally, Luminar could think in terms of developing a platform that could be replicated in Latino markets outside the United States.

Said Rios:

> Luminar will be the first mover in the space it is planning to carve out. It will not be competing with Entravision's current vendors like Nielsen because it will be serving a different need and taking a different tack altogether. The space has not yet attracted the attention of venture capitalists. It is important to stay ahead of the game from the beginning by continuously innovating in Big Data and building domain expertise. What kind of high entry barriers do I build at Luminar?

EXHIBIT 1: MEDIA INDUSTRY

1	GLOBAL MEDIA INDUSTRY 2012	Value ($ billions)	%
	Europe	283.3	32.0
	United States	255.1	28.8
	Asia-Pacific	253.6	28.6
	Rest of the world	94.1	10.6
	Total	886.1	
2	U.S. MEDIA INDUSTRY 2012		
	Broadcasting and Cable TV	142.6	55.9
	Publishing	45.6	17.9
	Advertising	37.9	14.9
	Movies and Entertainment	29.0	11.4
	Total	255.1	
3	U.S. MEDIA GROWTH PROJECTIONS		
	2013	260.7	2.2
	2014	264.9	1.6
	2015	271.7	2.6
	2016	279.2	2.7
	2017	285.7	2.3

Source: "Media in the United States," April 2013. Market Line 0072-2014, http://advantage.marketline.com.proxy1.lib.uwo.ca/Product?pid=MLIP0981-0028, accessed April 18, 2014.

EXHIBIT 2: U.S. POPULATION 2012

(in 000's)	U.S.	Latinos	Latino Segments					
			Mexican	Puerto Rican	Cuban	Central American	South American	Other Latinos
Total	308,827	52,358	33,671	4,866	1,832	4,249	3,072	4,668
Under 21	86,864	20,363	14,121	1,822	402	1,390	933	1,695
21-65	180,456	28,959	18,031	2,632	1,125	669	620	723
Over 65	41,507	3,036	1,519	412	305	2,190	1,519	2,250
Male	151,175	26,441	17,291	2,256	946	2,190	1,519	2,250
Female	157,653	25,917	16,380	2,621	886	2,058	1,554	2,418

Source: www.census.gov/population/race/files/ppl-bc12/bc12tab49.csv U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement 2012 - Internet Release Date: December 2013, accessed March 28, 2014.

EXHIBIT 3: PROJECTED U.S. POPULATION GROWTH 2010 TO 2050

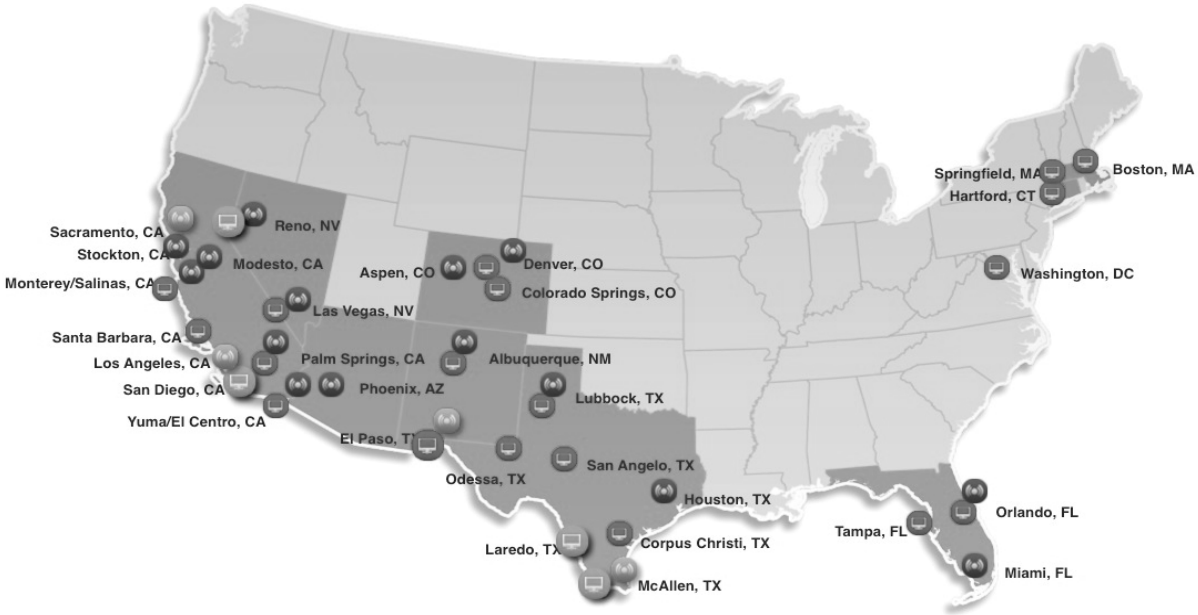
Source: http://es.nielsen.com/site/documents/State_of_Hispanic_Consumer_Report_4-16-FINAL.pdf Nielsen Q2 2012 Report, accessed March 10, 2014.

EXHIBIT 4: ENTRAVISION — INCOME STATEMENT

Year ending December	2012	2011	2010	2009	2008
Net Revenue					
– Television	156,839	131,490	132,561	124,437	145,938
– Radio	66,414	62,906	67,915	64,794	86,397
Total	**223,253**	**194,396**	**200,476**	**189,231**	**232,335**
Less: Direct operating expenses	92,256	88,590	84,802	83,902	100,801
Selling, general and admin.	37,818	36,511	38,046	38,278	43,709
Depreciation and amortization	16,426	18,653	19,229	21,033	23,412
Operating Profit	76,753	50,642	58,399	46,018	64,413
– Television	66,292	42,906	43,941	36,054	41,899
– Radio	10,461	7,736	14,458	9,964	22,514

Source: Entravision 2012 Annual Report, p. 46 and Entravision 2009 Annual Report, p. 46.

EXHIBIT 5: ENTRAVISION — GEOGRAPHICAL FOOTPRINT



Source: Company records.