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what3words: positioning the company for growth[[1]](#endnote-1)

R. Chandrasekhar wrote this case under the supervision of Professor J. Robert Mitchell 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.

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In May 2015, the three co-founders of what3words Ltd. (what3words), a technology firm based in London, England, were considering ways of ensuring that their firm was positioned to grow in the future.

Having financed their entrepreneurial journey with help from angel investors willing to take some chances along with them, the founders—Chris Sheldrick, Jack Waley-Cohen, and Mohan Ganesalingam—were now preparing to talk with a strategic investor, in hopes of securing the capital they needed to support the next level of growth.[[2]](#endnote-2) The strategic investor believed in their vision and in the long-term business potential of the firm, and was keen to provide a big round of funding, but wanted to be sure that the founders had a growth plan in place.

What3words was at a critical point in its development. It needed to gather momentum that could enable it to move beyond early adopters. It also needed to scale up in a short time. As a result of these pressures, the founders needed to address three questions.

The first question was whether the market, conditioned for decades to rely on written postal addresses that generally reflected numbered doors and buildings on specific streets, was ready for a new digital address system, which would thrive only if individuals and businesses perceived it as meeting a need rather than being a novelty. The second question was whether the company’s early mover advantage was, in fact, sustainable. Without mass adoption, the application (app) would slide into a niche position that it was not designed to occupy. The app was meant for all types of users and not for only specific types of users. The third question was whether they could, over the long term, strike an appropriate balance between creating a tool that would be accessible to all as a common “public good” and growing what3words into a commercially successful enterprise.

THE GEOSPATIAL INDUSTRY

The industry had its beginnings in 1968 in Canada, when the federal government had deployed a computerized system designed by geographer Roger Tomlinson to develop land inventory for rural Canada.[[3]](#endnote-3) Called the Canadian Geographic Information System (CGIS), it also mapped data about soils, agriculture, wildlife, forestry, and land use. Soon, the system was being replicated worldwide and used, in particular, by official agencies involved with national security (for example, in monitoring movements along national borders), law enforcement (for example, in tracking crimes in real time) and public safety (for example, in providing information to first responders and firefighters). Newly emerging technologies in imaging and satellite communications led to refinements in various Geographic Information System (GIS) tools. The launch of the Internet in the 1990s paved the way for progressive collaborations with private enterprise. It also led to the gradual evolution of the Global Positioning System (GPS). The GPS was a satellite-based navigation system, while the GIS, in its final form, evolved into a software program designed to store and manipulate the data that the GPS accumulated. Each system had its own unique capabilities and, when paired together, they became an invaluable resource for a variety of disciplines, including urban planning, disaster management, and agriculture.

While the defence sector was the primary driver of the geospatial industry and the GIS was the core of industry deployment in every country, new applications were opening up in civilian sectors, such as municipal governance (for example, in road and utilities maintenance) and farming (for example, in forecasting floods, droughts, and insect swarms). The specialized nature of its usage was giving way to a range of commercial applications. Business enterprises were beginning to rely on information available from computer mapping and satellite imagery to make data-driven strategic decisions.

By 2012, the United States Department of Labor had identified geospatial technology as one of the three most important high-growth industries of the 21st century (alongside nanotechnology and biotechnology)*.*[[4]](#endnote-4) With a repertoire of technologies (ranging from remote sensing to satellite imaging) and products (ranging from online maps to navigation systems), the geospatial industry had 2012 revenues of US$150 billion[[5]](#endnote-5) per annum globally, of which the largest proportion—$75 billion—came from the United States.

A study conducted by The Boston Consulting Group in the same year estimated that the revenues generated by the geospatial industry had a multiplier effect of 15–20 times in the United States. The study showed that, in the United States, the economic impact of the industry was approximately $1.6 trillion in service revenues alone (excluding product revenues) and $1.4 trillion in cost savings.[[6]](#endnote-6) According to the study, the value that the customers themselves believed they received from accessing geospatial information on their computers, tablets, and mobile devices amounted to an average of $350 per U.S. household annually.

Although the industry had made advances in technology over four decades, the central component of user experience—identifying a specific location around the world—had not yet evolved. Finding an address and communicating it to others was still an imperfect science. Street addressing was irregular and incomplete. No single addressing system was scalable, global, multilingual, and easy to use.

In 2009, the Universal Postal Union (UPU) highlighted this problem of not having an adequate address system as a major socio-economic challenge in both developed countries (for example, in Japan, where even if people knew the address system, they had to do some wandering to actually find an address)[[7]](#endnote-7) and developing countries (for example, in South Africa, where a location had 11 different address elements, including box address, postal address, street address, intersection address, landmark address, and so on).[[8]](#endnote-8) The UPU recognized that an address went beyond the postal requirement of delivering mail to homes and saw it as the basis of national security and international trade. An address was also integral to providing essential services, implementing public policy, administering tax regimes, dealing with natural disasters, and managing emergency services. As a result, the UPU launched an initiative called “Addressing the World—An Address for Everyone,”[[9]](#endnote-9) which recognized that an address infrastructure was a public good.

WHAT3WORDS COMPANY BACKGROUND

While organizing live music events after graduating in music from King’s College, London, England, in 2003, Chris Sheldrick, one of the founders and the principal driver of what3words, realized the importance of an accurate address system. He had faced the challenge of ensuring that tons of concert equipment, shipped from afar, arrived at a specific location at a predetermined date and time. All over the world, addresses in urban centres were imprecise. Many streets had no names. Some event sites had no addresses at all. Sheldrick had tried using GPS coordinates in place of addresses. Although the coordinates were accurate, the latitude-longitude (lat-long) specifications were difficult to remember and prone to input errors. In one particular instance, a truck driver reversed two digits in lat-long and ended up dropping off the gear kilometres away from the actual concert site.[[10]](#endnote-10)

Sheldrick spoke about his logistical frustrations to his friend, Mohan Ganesalingam, who, at the time, was working as a mathematician at the University of Cambridge. Ganesalingam suggested replacing lat-long numerical formats with words of common usage; and in late 2012, he started working on an algorithm. Both Sheldrick and Ganesalingam saw an opportunity to create an address system that combined the accuracy of GPS coordinates with the simplicity of words that could be easily remembered. The duo was soon joined by Jack Waley-Cohen, at the time, the United Kingdom’s reigning quizmaster, who had also led, for eight years, the operations of Lingo24, a computer-aided translation company.[[11]](#endnote-11) Driven by the vision of “changing the way the world thinks about location,”[[12]](#endnote-12) they launched what3words in March 2013.

Within months, there were rapid developments. The company released its first app in July 2013. In November 2013, it released an online application program interface (API), a set of tools and protocols with which outside vendors could build software applications. The API was meant to encourage development and integration into other apps and services. In October 2014, it released an offline software development kit (SDK) and included autocorrect functionality (error detection) and CompassMode (offline navigation) in February 2015. By then, the company had 12 employees, and it rolled out its three-word address system in nine languages, (English, French, Spanish, Portuguese, Swahili, Russian, German, Turkish, and Swedish) and was also being tested in new languages (for example, Italian, Greek, and Arabic).[[13]](#endnote-13) The founders had strengthened the core team with several senior level appointments, including chief marketing officer, chief technology officer, chief finance officer, and global partnerships director.[[14]](#endnote-14) The app seemed to have a ready market. For example, a potential global user base of four billion—individuals alone, excluding businesses—faced difficulties in identifying and targeting physical addresses.[[15]](#endnote-15)

By May 2015, the start-up had raised a total of $2.8 million in angel funding in three rounds (November 2013, March 2014, and April 2015). Up to this point, the company had been taking on investors only as they came. While this approach had worked early on, future growth beyond early adopters would require more extensive funding. To be able to attract investors, the firm required a clear business model and a compelling growth strategy.[[16]](#endnote-16)

The Application

In designing the app, the founders were most concerned with being the first to get it off the ground. Their focus was more on the specifics of “what” the product should be than on the specifics of “why” the users would require those functions. It was the founders’ own experiences that had led to the idea of a digital app. They were also aware that many people worldwide lived without addresses. The founders had assumed that the lack of addresses affected people’s lives in profound ways.[[17]](#endnote-17)

The system was basically a mobile app that could be downloaded on a smartphone. It required less than 10 megabytes of memory capacity because it was powered by an algorithm rather than a massive database. Any non-technical person could find any location in any part of the world accurately and also communicate it more quickly, easily, and accurately than with conventional GPS.

The system was based on slicing the total global grid (including land, sea, and ice caps) into 57 trillion 3 × 3 metre squares (equivalent to the size of a small bedroom). Each square was assigned an address consisting of three words. A software program initially allotted the words on the basis of two unique characteristics: they were selected at random and they had no contextual meaning. The triplets were chosen from a directory of between 40,000 words (for the English language) and 25,000 words (for other languages). The three-word combination was the geographical equivalent of an Internet protocol (IP) address, wherein every accessible machine or device on the Internet was identified by a series of four sets of numbers between 0 and 255.Each three-word combination was then scrubbed manually by what3words staff to eliminate words that could be considered offensive. The scrubbing would also screen out homonyms—words that sounded similar but were spelled differently (for example, sale and sail). The three-word combination was then processed by an algorithm that factored in additional metrics of evaluation, including word length, frequency of usage, distinctiveness, and ease of pronunciation.

The app was based on lat-long coordinates of the location, which provided the first layer. The three-word combination formed the second layer, superimposed on the first. The two layers were interchangeable; the geographic coordinates could be converted into the three-word address, and the three-word address could be converted to the geographic coordinates, as required. This reversal was made possible by the geocoder in the app.

Since the address was fixed for each grid, the app could work even when the device went offline due to poor connectivity. The address was also flexible. For example, for a high-rise location, one only needed to add the apartment or floor number. Depending on how big the property was, one could zoom into the grid and pick the three-word combination for the front door, side door, back door, basement, or garage.

The words were developed separately for each language; they were not translations. For example, the 3 × 3 square identified as games.incoming.ships[[18]](#endnote-18) was named motociclismo.fone.compraram in the Portuguese version, and erfolgsserie.geringste.badeort in German. People could use whichever language they were most comfortable with.

Competition

The company did not have direct competitors—so far. In the realm of using words as the basis of an address, what3words had the space all to itself. But there were several substitutes, which were all variations of three broad formats: alphanumeric codes, GPS coordinates, and P-codes.

Alphanumeric codes referred to combinations of letters and numbers. These codes had been adopted by most of the 190-member countries of the UPU. They were also known as Zone Improvement Plan (ZIP) codes in the United States, which was one of the first countries to implement them, in 1963. National postal authorities assigned the codes on the basis of geographical areas of addresses. In countries of Africa, some attempts had been made at further narrowing down an alphanumeric code to an address system that everyone could relate to. But such systems were localized. Although the systems were working well, they had not been scaled up. Their deployment was also limited to areas’ emergency response services. An example was SnooCODE, which was being used in Ghana.[[19]](#endnote-19) SnooCODE was a six-digit alphanumeric code that acted like a U.S. zip code but was more precise. For example, a SnooCODE of COF-K8D could locate a house to within approximately 7.2 metres. It was currently in use on mobile platforms and could work without Internet. Another example was Dar Ramani Huria, a World Bank-funded community mapping system in Tanzania that was originally used to flag areas prone to flooding during the rainy season but was also being deployed as an address location tool.

GPS coordinates were displayed in a standard configuration of 16 digits plus four letters, a decimal point, and then a positive or negative symbol. These coordinates were not only accurate but also universal. The configuration was functional between machines. GPS coordinates were popular among trained GIS professionals but prone to errors in communication when used by untrained people because the coordinates were impossible for ordinary individuals to remember. However, when used in combination with smartphone apps, GPS coordinates were more convenient.

P-codes were location-referencing systems used by non-governmental organizations (NGOs) and international organizations. They were part of the vocabulary of the United Nations and were used largely to classify rehabilitation settlements or administrative boundaries. Because P-codes were internally focused, they did not have mass adoption. Each P-code was a composite of a country code, an administrative level code, and incremental settlement numbers. Although they worked well within defined boundaries, extensive interorganizational coordination was necessary to avoid the existence of multiple P‑code versions within the same area.

Several substitutes were in play based on the above formats. Google Maps, for example, which provided the mapping API that what3words used for its service, also offered a web-based mobile mapping service. Google Maps enabled users to search locations by name, and its Street View option even offered a 360° panoramic view of the street location; however, loading the map required an Internet connection, which excluded large swathes of geography that lacked a network signal. Moreover, the service was not always accurate in locating a specific destination point because the address itself was constrained by both the local alphanumeric system and the accuracy of Google’s information. Although Google Maps had a “Ground Truth Initiative” that worked to create more accurate maps, it remained a work in progress.[[20]](#endnote-20)

Nearly a dozen apps were available along the lines of Google Maps. Many of these apps were similar and required online capability. Others offered offline capability but required large amounts of storage. For example, Maps.me’s offline mobile mapping application offered worldwide coverage of all countries and cities, and offered extensively detailed maps that could be downloaded onto a device.[[21]](#endnote-21) However, these many different map applications did not provide an answer for everyone. Although the gaps in the functionality of these applications would seem to be a first-world problem, the problem of individual address location was really much broader. As noted by one observer,

Around 75 per cent of the world suffers from inconsistent, complicated or inadequate addressing systems, meaning that around four billion people are “invisible,” unable to report crime, unable to get deliveries or receive aid, and unable to exercise many of their rights as citizens because they simply have no way to communicate where they live. This means that water facilities in remote locations can’t be found, monitored and fixed, and schools, refugee camps, and informal settlements remain without addresses.[[22]](#endnote-22)

Thus, although numerous map companies existed, they largely missed those individuals who lacked an address. The what3words technology could—literally—address such situations.

Early Adopters as a Foundation for Growth

By early 2015, what3words had four types of partnerships in place with several companies: technology partnerships, access partnerships, experimental partnerships, and plug-in partnerships. The companies were all early adopters of the what3words app.

Each partnership had a particular focus and the potential to establish a foundation for growth, although it was still unclear whether only one or two of these partnerships would best enable growth over the long term or whether a continued focus on all four types of partnerships would be required.

Technology partnerships were meant to strengthen the company’s core application. Partners included, for example, Safe Software, a Canadian company specializing in spatial data integration technology, which enabled seamless conversion between what3words addresses and specialist geographic systems; and Remind Me Where, a navigation app for people who were visually impaired, which dictated directions to a what3words address.

Access partnerships were meant to bring in captive customer pools. These partners included Navmii, a British firm specializing in navigation solutions, which had 20 million users worldwide and a global community of more than 850,000 contributors; and Esri, a geographic information software company whose core platform, known as ArcGIS, was being used by 350,000 businesses, government agencies, and NGOs around the world. The platform was scalable.[[23]](#endnote-23)

Experimental partnerships were meant to test projects that had potential to scale up in the future. These partners included Grupo Carteiro Amigo, a Brazilian co-operative that delivered mail to approximately 11.5 million residents in more than 1,000 slums (known locally as *favelas*) on the outskirts of numerous Brazilian cities. The favelas had no official maps and no individual addresses, and as a result, limited public delivery services and poor data connectivity. The co-operative used the what3words app to generate addresses in Portuguese to residents, who could now order goods online to be delivered in person.

Plug-in partnerships were meant to provide a revenue pipeline right away. These partners included Pollinate Energy, an Indian firm supplying low-cost, energy-efficient solar lighting directly to communities in need, which used what3words addresses to record customers’ locations on the spot, upload the data to cloud software when connected, and recall the addresses when revisiting customers’ homes; and In2Care, a Dutch company was using what3words to install, geo-tag, and locate the traps it had developed to control mosquito-borne diseases on the African continent.

In addition, what3words had associations that would ensure global visibility. For example, its geo-referencing system had been integrated with UN-ASIGN, an app that the United Nations used during natural disasters to map flooding points, damaged buildings, and hazardous electric lines.

The partnerships brought in both individuals and institutions as customers. While individuals generated volume, institutions generated value.

The Business Model

The primary source of income for what3words was the fee for licensing the coordinates to various partners such as businesses and governments. The fee was for access to the company’s API, SDK, and additional functionalities (for example, AutoCorrect). The company provided a range of discounted usage plans for qualifying organizations, including for not-for-profit entities and humanitarian agencies. For individuals, the service was free, both for the app and for using it on personal websites.

The company had a secondary source of revenue from a sub-brand called OneWord. It was available as an add-on and carried a fee (including for individuals) of $1.50 per annum. OneWord enabled users to choose an option of a single-word address, as opposed to the three-word combination. The word needed to be between six and 31 characters, and could include letters, numbers, and hyphens. The single word provided an opportunity for self-branding. OneWord was so popular that the company sold more than 10,000 addresses within a week of its launch.

Another revenue stream came from providing addressing consultancy to governments. The company was negotiating with national postal departments in several countries for licensing its software for converting three-word addresses into GPS coordinates, and vice versa.

Despite having generated a consolidated revenue of less than $1 million in two years, according to some estimates, what3words had yet to become profitable.[[24]](#endnote-24)

THE WAY FORWARD

In 2015, what3words was shortlisted for the “Innovator of the Year” award, which was scheduled to be announced during London Technology Week in June. Things were moving in its favour in the competitive domain of digital innovation. Nonetheless, what3words was at a crossroads. The way ahead depended on how the founders would resolve three different dilemmas: (1) how to build a foundation for future growth; (2) how to retain its early mover advantage, and (3) how to balance creating a public good with ensuring commercial viability.

Building a Foundation for Future Growth

Securing mass adoption was an important goal for the founders of what3words, and it required them to work in two directions.

First, the founders felt that they needed to secure more partnerships, which they saw as a quick way to gain traction and scale up. Of particular importance would be access partnerships (for the captive customers they would attract), experimental partnerships (for the platform they provided for rapid testing), and plug-in partnerships (for the revenue-generation capability they brought from day one). It was necessary to fine-tune the core value proposition of the app for each of the individual partners. The question was whether they had this right.

Second, building a foundation for future growth required the start-up to put in place formal systems, structures, and processes that would ensure accountability at various levels. The company’s angel investors had typically not intervened in the day-to-day management of what3words as a commercial enterprise, but the imminent arrival of a strategic investor would likely lead to a change in the way things were done. That is, a strategic investor would be better positioned to work to develop a clear path to profitability and, in a bid to safeguard investment, would be more likely to get involved in the business. The founders knew of the distinct possibility for tension in an ongoing relationship between themselves and a strategic investor. They knew that managing the relationship would be an added challenge, given the free-spirited approach that stemmed from their experience in such non-business areas as music, mathematics, and quiz creation.

Retaining the Early Mover Advantage

An early entry into the digital address system, driven by a technology it had developed internally, had given what3words a head start. Its lead had been reinforced by two other advantages provided by the external environment: what3words did not have to deal with large incumbents and it had a potential user base of 4 billion users who were, as the founders saw it, in need of its offerings. But could what3words convert those individuals into actual users? Only when what3words captured a large number of those users could it become the generic name for a digital address system.

The founders needed to work in three directions to be able to hold on to those early mover advantages. First, they needed to educate users about the benefits of the app. The market was ready but users were unaware of the benefits the app could provide. The founders of what3words understood the value of a digital address system because they had innovated it to address a challenge, or pain point, they had experienced themselves. But the end-users who were conditioned to an alphanumeric system were not necessarily experiencing the same challenge or pain point. That was a gap the founders needed to bridge.

Second, the founders needed to safeguard the core technology of what3words. One way to pre-empt potential competitors from gaining access to the technology was to safeguard its process patent, which had led what3words to apply for patent protection through the U.K. patent office. It had also filed for an international patent.[[25]](#endnote-25) In addition, what3words needed to continue to focus on innovation to keep up with the pace at which digital address technologies would evolve in the future.

Third, the founders needed to keep up with the pace at which the market for the what3words app would evolve. In a move that signalled the importance to the company of keeping on top of the market, the founders had not only recruited a chief technology officer but Ganesalingam had himself taken on an executive role as head of research and development. The dilemma was basic: How should what3words establish networks of vendors and developers (on the supply side) and of businesses, public institutions, and users (on the demand side) so that it could build an ecosystem around the app? Without such an ecosystem, what3words would find it difficult to retain the loyalty of its core customer group, which included early adopters.

Balancing Being a Public Good with Commercial Viability

In the founders’ minds, what3words had the potential to transform the way the world would share locations. They saw the technology as making it easy for individuals to locate and recall addresses. It presented efficiency improvement opportunities for businesses. Moreover, the company had made access to its app free for individuals. For businesses, it required payment for its offering of converting GPS addresses into three-word addresses.

The founders hoped that what3words was on its way to becoming a critical element of social infrastructure worldwide, leading both to increased usage of the app and to the makings of a public good. Widespread use of the what3words app would be good, but the company faced uncertainty in terms of becoming profitable. Future growth depended on finding the path to profitability.

The founders’ dilemma between being a public good and ensuring the company’s commercial viability was best illustrated by the experience of Twitter Inc. (Twitter), a digital start-up that offered online news and a social networking service where users could post and access 140-character micro-blogs. Twitter was a large, publicly traded company that disseminated news and information from individuals in real time for viewing by others in real time. As one commentator described it,

When Jeff Bezos purchased *The Washington Post*, it wasn’t because the newspaper was a compelling business opportunity. It was, and remains, a hallowed institution of journalism. The country’s pre-eminent newspapers, including this one, have long been controlled by families who have understood that the press is not just an ordinary industry, but a civic calling. Twitter is not yet treated as hallowed, but it has the makings of an institution that could be.[[26]](#endnote-26)

In this sense, Twitter could therefore be considered a public good. However, although its users numbered 317 million worldwide and were growing, Twitter was losing money: 10 years after its launch, it had accumulated losses of more than $2 billion.[[27]](#endnote-27) In one year alone, for the year ending December 2014, it had incurred a loss of $577 million. Securing a path to profitability was seemingly a difficult proposition for Twitter, partly because it was a kind of public good. But there was irony in the fact that companies advertising on Twitter were witnessing growth in sales and margins. For example, a company selling a bathroom odour-neutralizer ran an advertising campaign on Twitter during a holiday period. It secured $73,000 in sales, 93 per cent of which came from new customers, and saw a 50 per cent increase in basket size.[[28]](#endnote-28)

The founders of what3words needed to ensure that the company did not end up in the same situation as Twitter and were thus examining ways of resolving the tension between financial and public objectives.

The founders recognized that to be best positioned to grow the business in the future, they needed to address all three of these dilemmas: building a foundation for future growth, retaining the early mover advantage, and balancing being a public good with commercial viability. As part of this strategy, they needed to more immediately convince the strategic investor that they had a growth plan in place.

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ENDNOTES

1. This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of what3word Ltd. or any of its employees. [↑](#endnote-ref-1)
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