Strategic Report for Trimble Navigation Limited

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Executive Summary

Trimble Navigation Limited (Trimble) provides highly developed position-based solutions that enhance productivity and decrease costs across a range of industries. Trimble integrates GPS (Global Positioning System), laser, optical, and inertial technologies with software, wireless communications, and services to provide complete business solutions in over 100 countries around the world. Trimble has one of the best location-based technology product portfolios as a result of more than 850 patents and 30 years in the business. The company's technologies are used in industries like engineering, construction, surveying, geographic information systems (GIS) and mapping, and precision agriculture industries. Trimble operates in four main segments: Engineering & Construction, Field Solutions, Mobile Solutions, and Advanced Devices.

The current recession has significantly impacted the recent performance of Trimble and the industry at large. Abrupt declines in construction projects and consumer spending have tightened many of Trimble's end markets. However, price increases in areas like farming have given rise to increased spending on Trimble solutions.

In this report, Oasis Consulting focuses its attention on large growth opportunities and the ways in which Trimble should take advantage of them. In an effort to kick-start their economies, governments will be spending large sums of money on projects like the construction and renovation of highways, bridges, buildings, and energy production. Soon demand for infrastructure like water storage, waste management, and energy grids, will be increasingly high as global population rises and emerging markets become wealthier. Lastly, the agriculture market is becoming increasingly competitive and costly, promoting a need for new efficient operating solutions. The strategic plan incorporates Trimble management's strategic plan, which involves reinforcing Trimble's position in existing markets, extending their position through new products offerings, bringing existing technology into new markets, and entering new markets.

In order to improve market share and brand awareness Trimble must continue to develop GNSS products with the most advanced capabilities while trying to improve the offerings of

Trimble's Connected Site. Finding improved solutions serving the five key participants in infrastructure development: owners, government agencies, surveyors, contractors, and Architecture, Engineering, & Construction (AEC) firms will allow Trimble to pick up market share. Trimble must also significantly expand their domestic and international distribution networks to improve product adoption through more efficient management, partnerships, and acquisitions. On that note, Oasis recommends that Trimble hire an outside firm to analyze and improve their distribution and marketing model.

Company Overview

History

In 1978, Charlie Trimble, and two of his associates from Hewlett-Packard, founded Trimble Navigation – the same year United States Government launched the first NAVSTAR GPS satellite as part of an effort to help strengthen the nation's defenses against Soviet attack.

The company originally focused on marine navigation products using LORAN technology, and while GPS was developed exclusively for military purposes, Mr. Trimble saw the potential for space-based GPS technology revolutionize a wide range of commercial and business applications. From that point, the company devoted itself developing the fledgling GPS technology purchased from Hewlett-Packard.

Trimble's first GPS products were used by the land and hydrographic survey industries. In 1984, Trimble launched the first GPS-based geodectic-survey product, used by oil-drillers on offshore platforms. Mariners soon began to use GPS location information to find real-time velocity and improve the navigation and performance of vessels. Trimble significantly increased its product base and continued to lead the development of military, commercial, and consumer applications using GPS. During this period of time Trimble received several patents for developments in GPS technology.

Trimble ventured into new markets and in 1989, purchasing the Navigation Systems Division of TAU Corporation. The acquisition enabled the company to start developing

differential GPS (DGPS) technology, which improved the accuracy of the fleet management systems. In 1990, Trimble acquired, Datacom Software Research Ltd., adding survey and mapping software products to the Trimble product line.

In 1990, in a $30 million offering, Trimble became the first GPS company to go public. (NASDAQ: TRMB)

In 1992, Trimble created real-time kinematic (RTK) technology, enabling continual GPS updating while on the move. This technology allowed surveyors to perform topographic mapping, stakeout, Geographic Information System (GIS) data acquisition, and as-built surveys in real-time.

Trimble was thrust into the investor spotlight after Operation Desert Storm (Aug. 1990 – Feb. 1991). Trimble's provided Trimpacks, portable standard positioning service (SPS) receivers, to the troops which received admirable reviews from the military. Trimpack receiver orders totaled $40 million by 1991, prompting a doubling of revenue and a soaring stock price.

After the Gulf War decreased military sales slashed Trimble's revenue. The problem was exacerbated by companies taking note of Trimble's success in a growing multi-billion dollar industry, prompting Honeywell, Hughes, Motorola, and, Westinghouse to enter the GPS market. In 1992 the company went through restructuring and there were claims that Trimble's only option was to be acquired. Mr. Trimble was firmly opposed to the option and instead created strategic alliances with Silicon Graphics, Pioneer Electronics, Westinghouse, and other large companies. These partnerships kept Trimble alive and thrust them beyond military and navigation markets into developing markets like avionics, personal electronics, and automobiles.

In March 1999, Steve Berglund, previously of Spectra Precision Group, took over as President and CEO of Trimble. Shortly after Mr. Berglund's arrival he proceeded to narrow the business focus of the company towards the markets in which it operates today.

In 2000, Mr. Berglund's acquired his previous employer, Spectra Precision Group, adding laser and other optical devices complementary to Trimble's GPS solutions for the construction, surveying, and agricultural markets. Trimble also acquired Tripod Data Systems (TDS), which specialized in data collection software and hardware for the land survey, construction, and GIS markets.

In 2001, Trimble sold its avionics division to Honeywell and created its Mobile Solutions Division; focusing on business areas that were expected to provide growth and sustained profitability: fleet and asset management, agriculture, component technology, and engineering and construction.

Joint Ventures

In April of 2002, Trimble formed a 50-50 joint venture with Caterpillar, creating Caterpillar Trimble Control Technologies LLC. The company develops and manufactures advanced electronic guidance and machine control products for Caterpillar's earthmoving machines used in the construction, mining, and waste industries.

In March of 2003, Trimble entered a 50-50 joint venture with Nikon Corporation, creating Nikon-Trimble Company Limited. The joint venture designs and manufactures surveying instruments and improved Trimble's access existing Nikon customers and to emerging markets in Russia, Eastern Europe, India, and China.

On October 3, 2008, Trimble started VirtualSite Solutions (VSS), a joint venture with Caterpillar. (Trimble holds 65% ownership to Caterpillar's 35%.) VSS develops software for fleet management and connected worksite solutions for both companies as well as sells software subscription services to Caterpillar and Trimble, which are then sold through individual respective distribution channels.

Acquisitions

Trimble has augmented its business by acquiring companies that have established entry-points to emerging markets, filled product line gaps, or added new applications to Trimble's

solutions portfolio. The following acquisitions have enabled Trimble to remain at the forefront of GPS and Information Technology development.

Date	Company Name	Sector	Company Description
Jun, 2000	Spectra Precision Group	Engineering & Construction	Provides construction lasers, machine control systems, optical survey instruments and software for AEC solutions.
Nov, 2000	Tripod Data Systems, Inc.	Field Solutions	Develops software for data collection applications, manufactures rugged Windows CE-based handheld data collectors such as their TDS Ranger, and develops software for pen computer applications through its PenMetrics business unit..
Apr, 2001	Assets of Grid Data	Mobile Solutions	Offered Internet location-based services for the mobile workplace.
Aug, 2002	LeveLite Technology	Engineering & Construction	Manufacturer or laser tools.
Jun, 2003	Applanix Corporation	Advanced Devices	Offers Position and Orientation Systems (POSTM) developed specifically for robust positioning in challenging and dynamic environments.
Dec, 2003	MENSI S.A.	Engineering & Construction	Provides 3D scanning capability tools.
Mar, 2004	TracerNET	Mobile Solutions	Provided wireless fleet management solutions, allowing Trimble to focus on integrating the best features from each company to offer more diverse and complete fleet management solutions.
Jul, 2004	GeoNav GmbH	Engineering & Construction	Provides of customized field data collection solutions for the cadastral survey market in Europe.
Jan, 2005	Pacific Crest Corporation	Engineering & Construction	A supplier of wireless data communication systems for positioning and environmental monitoring applications.
Apr, 2005	Apache Technologies Inc.	Engineering & Construction	Apache designs, manufactures, and distributes professional laser products for construction leveling and alignment applications. Trimble expects the Apache acquisition to extend its laser product portfolio for handheld laser detectors and entry-level machine
Oct, 2005	MobileTech Solutions, Inc.	Mobile Solutions	Automates the sale and delivery of high-volume consumer products such as baked goods, beverages, dairy, frozen foods and snacks to retail stores.
Dec, 2005	Advanced Public Safety, Inc.	Advanced Devices	Provides real-time information to police officers via in-vehicle computers and handheld mobile computing devices to improve safety, productivity and accuracy.
Feb, 2006	Assets of The XYZs of GPS, Inc.	Engineering & Construction and Field Solutions	Develops real-time GNSS reference station, integrity monitoring and dynamic positioning software for meter, decimeter and centimeter applications.
Apr, 2006	Quantm International, Inc.	Engineering & Construction	A transportation route optimization software used for planning highways, railways, pipelines and canals.
May, 2006	Eleven Technology, Inc.	Mobile Solutions	Provides real-time information to mobile field workers via handheld mobile computing devices to improve customer service levels, on-time deliveries and accurate invoicing.
May, 2006	BitWyse Solutions, Inc.	Engineering & Construction	A data management company specializing in 2D and 3D software applications for engineering and construction plant design.
Oct, 2006	Visual Statement, Inc.	Mobile Solutions	Provides software tools for crime and collision incident investigation, analysis and reconstruction, as well as state-wide enterprise solutions for reporting and analysis used by public safety agencies.
Nov, 2006	Meridian Systems, Inc.	Engineering & Construction	Provides management technologies to the building owner and architecture, engineering and construction (AEC) market segments.
Nov, 2006	XYZ Solutions	Engineering & Construction	A provider of real-time, interactive 3D graphical software for positioning and machine control technologies.
Nov, 2006	Spacient Technologies	Field Solutions and Mobile Solutions	A provider of enterprise field service management and mobile mapping solutions for municipalities and utilities.
Feb, 2007	INPHO GmbH	Field Solutions	Offers photogrammetry and digital surface modeling for aerial surveying, mapping and remote sensing applications.
Feb, 2007	@Road, Inc.	Mobile Solutions	Provides an internet based productivity enhancement service for companies with a mobile workforce using GPS and wireless data networks.
Sep, 2007	Ingenieurbüro Breining GmbH	Engineering & Construction	Provider of customized field data collection and office software solutions for the cadastral survey market..
Nov, 2007	UtilityCenter® assets from UAI, Inc.	Field Solutions	Provides a comprehensive suite of workflow solutions designed to automate the daily business operations of utilities.
Jan, 2008	Crain Enterprises, Inc.	Manufacturing	A manufacturer of accessories for the geomatics, surveying, mapping, and construction industries, focused on polymer and composite-based products.
Jan, 2008	HHK Datentechnik GmbH	Field Solutions	Provides of customized office and field software solutions for the cadastral survey market in Germany.
Jan, 2008	Géo-3D Inc.	Mobile Solutions	A leader in roadside infrastructure asset inventory solutions
Jul, 2008	SECO Manufacturing Company	Manufacturing	Specializes in the development, fabrication and machining of metallic accessory products.
Oct, 2008	Assets of RolleiMetric	Field Solutions	A provider of metric camera systems for aerial imaging and terrestrial close range photogrammetry.
Oct, 2008	Assets of Tru Count, Inc.	Field Solutions	A leading manufacturer of air and electric clutches that automate individual planter row shut-off.
Nov, 2008	Callidus Precision	Engineering & Construction	Provides 3D laser scanning solutions.
Nov, 2008	TopoSys GmbH of Biberach an der Riss	Field Solutions	A provider of aerial data collection systems comprised of LiDAR and metric cameras.
Dec, 2008	Assets of Rawson Control Systems	Field Solutions	Manufactures hydraulic and electronic controls for the agriculture equipment industry.
Dec, 2008	FastMap and GeoSite software assets from KOREC	Engineering & Construction and Field Solutions	Acquired software development, professional services, and business development teams. Allows Trimble to provide optimized software and professional services in Europe, Africa and the Middle East.
Jan, 2009	Assets of Callidus Precision Systems GmbH	Engineering & Construction	Provider of 3D laser scanning solutions for the industrial market.
Mar, 2009	QuickPen International	Engineering & Construction	Provider of Building Information Modeling (BIM) software for the heating, ventilation and air conditioning (HVAC), mechanical construction and plumbing industry.

Business Model and Market Overview

Trimble provides advanced positioning solutions, with heavy reliance on the use of GNSS, in the areas of surveying, agriculture, construction, asset management, mapping, and mobile

resource management. Their products aim to lower operational costs, increase productivity, and improve quality.

Trimble is organized into four major reporting segments including their various applications and product lines: Engineering and Construction, Field Solutions, Mobile Solutions and Advanced Devices. Each segment consists of businesses which are responsible for product development, marketing, sales, strategy, and financial performance. Products are sold through dealers, representatives, joint ventures, and other channels throughout the world. These channels are supported by Trimble sales offices from 17 countries.

Engineering and Construction (E&C)

This segment primarily focuses on the following applications:

- Construction
- Construction Asset Management
- GeoSpatial
- Infrastructure
- Marine Construction
- Mining
- Power, Process, Plant
- Surveying

These products are used by survey and construction professionals in the field for positioning, data collection, field computing, data management, and machine guidance and control. The applications served include surveying, road, runway, construction, site preparation and building construction.

E&C products aim to improve productivity and accuracy throughout the entire construction process including the initial survey, planning, design, site preparation, and building phases. The solutions often incorporate multiple technologies including, GPS, optical, laser, radio, or cellular communications.

The products allow surveyors to complete operations in the field faster, more reliably than with conventional surveying instruments, and with a smaller crew through GPS and robotic optical surveying instruments. Guidance products for heavy machinery allow operators to form desired landmasses while reducing stakeout time, project downtime, and limiting the need re-work.

Trimble's Connected Site integrates many of the products within the E&C segment to provide a grouping of complementary solutions to users. The Connected Construction Site provides tools to integrate project data and customized status information to construction professionals. The solution includes applications for Trimble's original Integrated Surveying solution, which seamlessly integrates surveying instruments such as GNSS and GPS receivers, optical total stations, and 3D scanners.

E&C products are developed and sold through a global network of independent dealers that supported by Trimble personnel. This channel is bolstered by joint ventures with Caterpillar and Nikon, as well as private branding arrangements with other companies.

Field Solutions

This segment primarily focuses on the following applications:

- Precision Agriculture
- Guidance
- Flow and Application Control
- Water Management
- Information Management
- Mapping & GIS
- Public Safety
- Utilities

The segment provides solutions in a variety of agriculture and geographic information systems (GIS) applications. In agriculture these include precise land leveling and machine guidance systems. In GIS they include handheld devices and software that enable the collection of data on assets for a variety of governmental and private entities.

The segment's agriculture products mainly consist of manual and automated navigation guidance for tractors and other farm equipment used in spraying, planting, cultivation, and harvesting applications, as well as positioning solutions for leveling agricultural fields in irrigation applications and aligning drainage systems to better manage water flow in fields.

Trimble's GIS products are focused on handheld data collectors and associated software. The data collectors allow users in the field to store, edit, analyze, and display geographic information so it can be incorporated into GIS databases. The software helps improve

operational efficiency by automating field service processes. Through GIS and location-based technologies combined with mobile and wireless communications, Trimble's Utilities Field Solutions offer integrated field and back office software solutions for managing utility mobile workers and their field work activities, including asset maintenance, GIS mapping, outage response, and automated vehicle locating (AVL).

Trimble distributes these products to municipal governments, natural resource agencies, and utility companies, primarily through a network of independent dealers and business partners, supported by Trimble personnel.

Mobile Solutions

This segment primarily focuses on the following applications:

- Rugged Handheld Computers
- Mobile & Fleet Management
- Public Safety

These solutions enable end users to monitor and manage their mobile assets by communicating location and activity-relevant information from the field to the office. Trimble offers a range of products that address a number of sectors of this market including truck fleets, security, and public safety vehicles.

Trimble's mobile vehicle solutions typically include an onboard hardware device consisting of a GPS receiver, business logic, sensor interface, and a wireless modem.
Trimble's mobile worker solutions include rugged handset devices and software that automate service technician work in the field and synchronize to a client server at the back office for integration with business applications.

In Fleet Management, Trimble's scheduling and dispatch solution is an enterprise software program to optimize scheduling and routing of field service technicians. Trimble's accompanying Mobile Resource Management help users economize on transportation fuel costs.

Through the acquisition of Advanced Public Safety, Trimble provides mobile and handheld software products used by law enforcement, fire rescue and other public safety agencies.

Trimble's strategy focuses on sales to large, enterprise accounts with more than 1,000 vehicles or routes and sells directly to end-users. Sales cycles tend to be long due to field trials which are usually followed by long decision-making periods.

Advanced Devices

This segment is composed of the Component Technologies, Applanix, Trimble Outdoors, and Military and Advanced Systems operations. This segment is primarily hardware centric, with exceptions within Trimble Outdoors and Applanix, and markets to original equipment manufacturers (OEMs), system integrators or service providers, and has products that can be utilized in a number of different end-user markets and applications.

Component Technologies supplies GPS modules, licensing and complementary technologies, and GPS-integrated sub-system solutions for applications requiring precise position, time or frequency. Component Technologies serves a broad range of vertical markets including telecommunications automotive electronics, and commercial electronics. Sales are made directly to OEMs , system integrators, value-added resellers and service providers who incorporate our components into a complete system-level solution. This segment has a cooperative licensing deal with Nokia which provides Trimble access to a non-exclusive license to Nokia's location-based patents for use in Trimble's commercial products and services. The company also has a licensing agreement with Marvell Semiconductors for our full GPS Digital Signal Processor software as well as tools for development support and testing.

The Military and Advanced Systems segment supplies GPS receivers and embedded modules that use the military's GPS advanced capabilities. The modules are principally used in aircraft navigation and timing applications and are sold directly to either the U.S. Government or defense contractors.

The Trimble Outdoors business utilizes GPS-enabled cell phones to provide information for outdoor recreational activities includeing hiking, biking, backpacking, boating, and water

sports. Consumers purchase the Trimble Outdoors product through wireless operator partners Sprint-Nextel, SouthernLINC Wireless, and Boost Mobile.

Trimble's Applanix business develops, manufactures, sells, and supports high-value, precision products that combine GPS with inertial sensors for accurate measurement of position and altitude, flight management systems, and scalable mobile mapping solutions used in airborne, land, and marine applications. Sales are made through a direct sales force to end users, systems integrators, and OEMs, and through regional agents.

Competitive Analysis

FORCE	STRATEGIC SIGNIFICANCE
Internal Rivalry	High
Supplier Power	Medium
Buyer Power	Medium
Entry and Exit	Low
Substitutes	Low
Complements	High

Internal Rivalry

Trimble competes across many highly competitive sectors and their success is dependent upon price, product quality and performance, customer service, technological development, and their ability to enter emerging markets. Trimble, Topcon Corporation, and Leica Geosystems are recognized as market leaders in GPS, optical, laser, and RTK (Real Time Kinematic) solutions – resulting in strong competition in each of Trimble's end markets.

Within E&C, Trimble faces trouble combating larger entities with superior financial positions. Hexagon AG, a Swedish company in the metrology and positioning market, owns Leica and Novatel Inc., two important GNSS (GPS and GLONASS) solutions providers, in addition to other laser and optical companies.

Hegaxon's access to capital is significantly greater than Trimble's. Hexagon maintains a €1 billion (approximately $1.293 billion) loan facility and as of December 31, 2008 with approximately $350 million remained unused. This trumps Trimble's $300 million revolving credit. Hexagon's management wants to continue adding strategic complements to their product portfolio. In January 2008, the company acquired Elcome Technologies Pvt. Ltd., a market leader in India and a distributor and systems integrator of products and solutions for positioning, navigation, alignment, measurement, and surveying. Hexagon already boasts that 47 percent of their 2008 income comes from emerging markets and new technologies. In recent years, Hexagon has focused on increasing its local presence in potential growth areas

including Brazil, Russia, India, and China, which will make it harder for Trimble to enter these markets.

Trimble also faces competition from Topcon within the E&C segment. In February 2008, Topcon acquired Sokkia Ltd., a Japanese manufacturer of GIS and GPS/GNSS receivers, theodolites, levels, 3D coordinate measuring, and laser systems. Topcon boasts mmGPS, a GNSS-based system integrated with laser technology that is accurate to the millimeter, for fine grading, layout, paving, and other applications requiring vertical accuracy. In recent years, Topcon has acquired companies within Trimble's markets including, KEE Technologies Pty Ltd. (2006), for entry into the field of agriculture; and business rights from Javad Navigation Systems (2007), a high-precision GNSS receiver provider. Similar to Trimble's products, Topcon's Paradigm G3 chip enables its products to use signals from the main satellite systems – GPS, GLONASS, COMPASS, and the EU's intended Galileo system. Topcon also has better existing presence in China as noted by Topcon's deal for the supply of GNSS receivers and software for the Shandong Province Continuously Operating Reference Station Network (SDCORS). The SDCORS network is designed to provide full coverage of Shandong Province of China with network RTK capability and it is an effort by the provincial government to improve and modernize its surveying infrastructure. Networks like these improve product adoption of the company operating that network.

Within Field Solutions, Trimble faces competition from larger more vertically integrated implement companies like John Deere as well as agricultural instrumentation suppliers like Hemisphere GPS, Raven Industries, and Novariant.

John Deere, through NavCom Technology, provides precision farming products integrated into John Deere equipment to improve farming efficiency. The solutions include GPS control systems for planting, spraying, fertilizing, and air seeding. The company's guidance systems are based on Deere's AutoTrac technology, which compete closely with the technology used by Trimble's joint venture with Caterpillar. In support of these guidance systems John Deere offers enhanced accuracy through dual frequency GPS and access to the StarFire network, a global satellite-based augmentation system (GSBAS) with a global subscription service that provides real-time accuracy. These products are more reliant on

their proximity to their augmentation systems and NavCom lacks Trimble's portfolio strength in L5 and other high frequency band capabilities. However, John Deere's reputation and presence within the agricultural sector will keep them in a competitive position in the industry.

Hemisphere GPS and Raven Technologies both offer competing precision agriculture products at a lower cost and lower accuracy. The companies will likely gain market share in the virtually untapped market but will struggle to compete for the most lucrative contracts as a result of their technological inferiority.

Trimble's primary markets for GIS software include government and commercial electric, gas, water, and wastewater utilities. Competitors are usually utility industry GIS software and service companies, but also includes companies like Magellan and Topcon. In this market Trimble also has a partnership with ESRI, one of the leaders in the GIS and mapping industries, helping position itself against the competition.

Within Military and Advanced Devices Trimble faces significant competition from Rockwell Collins, L3, and Raytheon. These companies are predominantly geared towards military technology and have a much larger hold on the military market. Their presence will block any significant entry into the military market and they have significantly larger resources, making competing with them on a large scale very difficult.

Trimble also faces competition from hundreds of companies in its other industries. Some of its other main competitors within the Field Solutions and Mobile Solutions sectors are location-based services providers like Garmin, TomTom, LoJack, NovAtel, Pharos Science & Applications, OmniStar, and many others. (For Oasis' complete Trimble Navigation Market Analysis please contact our sales team.)

Supplier Power

Trimble faces moderate to strong supplier power because of its decision to use a mix of in-house manufacturing and third party subcontracting. Trimble has acquired specific manufacturing companies within new markets to go along with existing manufacturing

facilities and covers a significant portion of overall production, especially in regards to their laser and optics-based products.

Flextronics International Limited (Flextronics) manufactures many of Trimble's GPS devices, including all of Trimble's Component Technologies products and some of Trimble's Construction and Survey, Field Solutions, Mobile Solutions, and high-end GPS products. Trimble manages product design through pilot production for the subcontracted products and is directly involved in qualifying suppliers and key components used in their products. Trimble's relies heavily on Flextronics and is required to give them a twelve-month product forecast and at least 30 days of advanced notice for product delivery. This relationship leaves Trimble vulnerable to quick changes in demand. As a main third-party provider of Trimble products Flextronics can influence Trimble's margins.

Trimble also has specific suppliers for a number many critical components. The company has experienced shortages of components in the past their reliance on a limited group of suppliers exposes them to potential inability to obtain an adequate supply of required components and reduced control over pricing.

Buyer Power

Given the nature of the advanced positioning solutions industry, buyer power will always be high at the macro level due to the number companies offering location-based hardware, application software, wireless communications, and services to provide complete commercial solutions. The industry is highly competitive and has many products that serve as sufficient substitutes.

Within some of Trimble's markets, brand identity is important. For instance, surveyors will become attached to a specific company's products due to familiar interfaces, customer services, and perceived reliability. Trimble does maintain an advantage in differentiation, along with its top competitors, for offering some of the most advanced location-based technology, which allows Trimble to have some stickiness to higher costs.

However, Trimble faces its most significant buyer power when dealing with large companies, government entities, and militaries. When infrastructure demand begins to take off Trimble and its competitors will face significant buyer power and take on deals that offer lower margins in an effort to win these hefty contracts to governments and large companies.

Entry and Exit

Entry into the location-based solutions market requires intellectual capital, an established distribution network, capital for R&D motivated expenses and acquisitions, and marketing. (It also requires astronomical amounts for the governments that launch satellites and maintain the GNSS) The companies that pose the most significant entry threats are companies like Hexagon, Rockwell Collins, Honeywell, and John Deere. The companies have the financial resources to acquire smaller location-based solutions providers and integrate their product into existing solutions or further promote the product through larger distribution channels; making it difficult for smaller companies to remain independent. As a result Trimble faces less of a threat from smaller up-and-coming companies than it does from entry by larger corporations.

Trimble could face problems with exit barriers in some of its smaller divisions like Trimble Outdoors if were interested in selling them. Trimble Outdoors operates in a low margin area and provides minimal revenue to the company. Magellan recently sold off its consumer devices division, which would suggest that there would still be a market for like solutions but the products are less desirable and thus less liquid.

Substitutes

Trimble and its competitors have revolutionized multiple industries, providing products that significantly decrease costs and enhance the quality, accuracy, and efficiency of projects. Trimble does not face any significant threat due to substitutes in the intermediate-run, as their solutions are far more efficient and cost effective than traditional solutions. With the current global slowdown, potential customers will be able to get away with traditional methods of surveying, mapping, farming, construction, etc., but will need to upgrade to location-based technologies to compete in the future.

However, the technology industry is a fast-paced industry, in the same way Trimble's solutions are superior substitutes to traditional solutions, current GPS technology will be an inferior substitute to more accurate L5 capable GNSS products and the like.

E-LORAN (Enhanced Long Range Aid to Navigation) can often be competitive with GPS systems when signals are unavailable or degraded. The technology emits a high powered and low-frequency signal from ground-based transmitters that is less susceptible to jamming. The technology is less accurate than fully functioning GPS but can be used to complement GPS systems in marine navigation markets.

Complements

On a macro level, the continued deployment of satellites, technological enhancement of the GNSS, and growing pervasiveness of RTK networks will make Trimble's technology significantly more accurate and useful for future users.

The United States' Block IIF satellites with L5 signal capability, will increase the general accuracy of Trimble's GNSS/GPS receivers. This, combined with China's launch of their COMPASS system that will feature slightly more powerful signals than the L1-CA and L2C signals and the European Union's launch of the Galileo system will provide significant value added to Trimble products.

RTK and VRS networks and to a lesser extent RTK clusters have seen increased growth in recent years to enhance the accuracy of GNSS/GPS products. RTK/VRS systems are increasingly being created and operated by departments of Transportation, survey equipment dealers, cooperatives, and GNSS solutions manufacturers. The increased availability of these reference networks will improve adoption of location-based technologies for precision agriculture and survey applications.

Trimble's Connected Site solutions revolve around the idea of combining high-accuracy positioning products with multiply complementary solutions for a total solution that covers whole processes of engineering and construction projects. Products like these have

revolutionized the way that surveying, farming, GIS mapping, utilities, forestry, engineering, and construction industries operate.

Integration of location-based technology within Architecture, Engineering, and Construction (AEC) and Building Information Models (BIM) is part of the growing convergence trend that could end up having 3D/Computer-Aided Design (CAD) and Computer-Aided Manufacturing (CAM) software help machines complete tasks automatically.

SWOT

Strengths

- **Consistent Focus on Location-Based Services**: The company's focus has rarely strayed from location-based services fields and has thus made itself a market leader without taking on superfluous projects.
- **Trend-Aware**: Trimble has been able to stay at the cutting edge of location based services by developing or acquiring new technologies. Through a strong forward-thinking product pipeline, their new developments have helped revolutionize the way certain industries operate.
- **Trimble Name**: Trimble has been a part of the GPS industry since the beginning and is known for making quality products.
- **GNSS System Stability**: The GNSS system is in constant development and maintained by multiple governments. Trimble's solutions rely heavily on GNSS and benefit greatly from continued external investment.
- **Signal Tracking**: Trimble is one of the few companies whose products track all available satellite signals. As long as these signals provide value to the company it will continue to use them. Their newer products include capabilities for L5 frequency signals, which are to be implemented with first GPS Block IIF launch.
- **Growing Number of RTK and Virtual Reference Station (VRS) Networks**: The increased number of RTK/VRS networks will increase the implementation of location-based services industry.

Weaknesses

- **Reliance on Engineering and Construction**: In 2006, 2007, and 2008, the Engineering and Construction segment composed 68%, 61%, and 56% of total revenue respectively. This reliance on one end market leaves the company vulnerable to swings in customer demand.
- **Dependence on Few Manufacturers and Suppliers**: The company relies heavily on Flextronics for manufacturing, and a select group of suppliers for critical components, leaving the company vulnerable to swift changes in demand and reduces their control of pricing.
- **Reliance on Proprietary Technology**: As with any growing technology industry, it is difficult to continually outpace the competition in R&D or strategic acquisitions.
- **Decreased Balance Sheet Cushion**: As a result of acquisitions in 2008 the company went from $.60 net cash per share to a slightly net debt position. (Deutsche Bank) The company has steadily increased its debt.

Opportunities

- **Economic Stimulus**: The United States Economic Recovery Plan is one of the many planned economic stimulus packages and will pump money into the development of rural broadband, energy and water programs, highway transportation, and other areas benefiting from GNSS/GPS products.
- **Precision Agriculture**: The precision agriculture market is in an extremely early stage and has minimal product saturation.
- **International Expansion**: Trimble could position itself in foreign markets so that when the global recession turns they are in a position to win market share in growing economies. Growing countries will have increased demand for development, including energy grids, housing developments, and utilities control. Trimble's solutions for quick GPS data capture with GIS integration.
- **Potential Partnerships**: Future demand for smartphones with location-based services will be in high demand. There may be opportunities to work with OEMs to include Trimble products in their devices. Furthermore, partnerships or joint ventures like the one with Caterpillar could be advantageous to the company.

- **Acquisition Targets**: Due to the recession, many companies may not have the staying power to survive and could be acquired for relatively cheap.
- **Monitoring Projects**: GPS/GNSS solutions have increased potential for use in monitoring projects with the development of real-time dual-frequency solutions, eclipsing the capabilities of near-real-time single-frequency solutions. Bridges, dams, buildings, and sliding slopes.
- **Incorporation in RFID**: As GPS chips and subsystems become smaller, faster, and less expensive, the potential to integrate the technology with Radio Frequency Identification (RFID) technology will bring location-based technology into more applications.

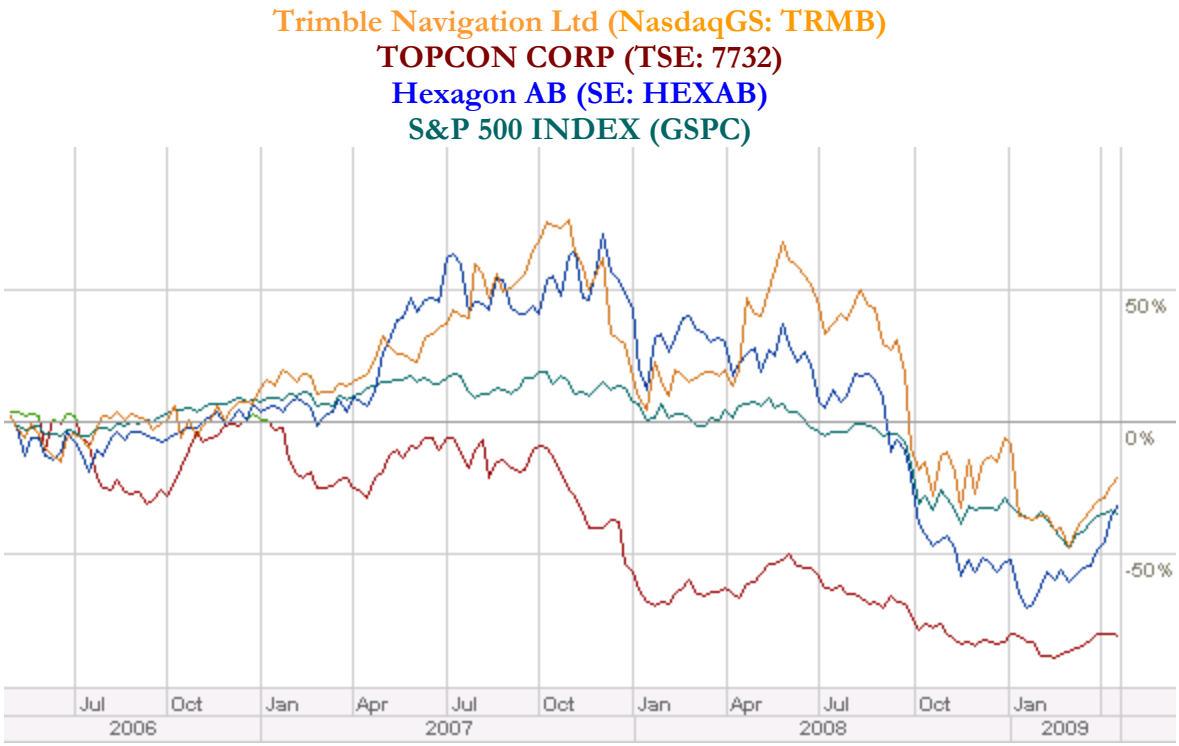
Threats

- **Global Economic Crisis**: The performance of the company depends on worldwide economic conditions and the ensuing effects on business and government spending. Credit market uncertainty has could force customers to delay or cancel purchases and hurt distributors' abilities to purchase goods on credit.
- **Protectionism**: Could potentially reduce demand for products overseas.
- **GNSS Fees**: The company's technology is dependent on the use of 30 free GPS satellites which are operated by the US Government. If the government required fees or ceased upkeep of the system it could significantly hurt the company.
- **Radio Frequency Band Changes**: Changes in the allocation of radio frequency bands could affect the performance of Trimble devices and their usefulness in the field.
- **Debt**: Recently took on $100 million in debt and went from $0.60/net cash to slightly net debt. This will limit their ability to acquire companies and gain market power.
- **Failure to Enter New Markets**: This could happen as a result of limited power to raise debt and acquire new technologies or through unsuccessful R&D projects.

Financial Analysis

Overview

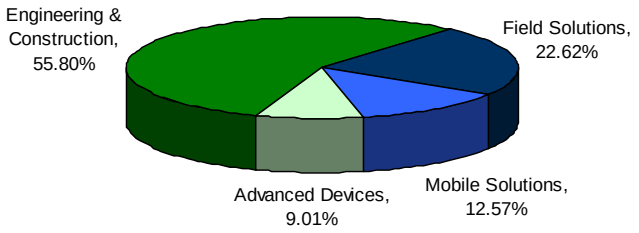
Three-Year Stock Price Comparison



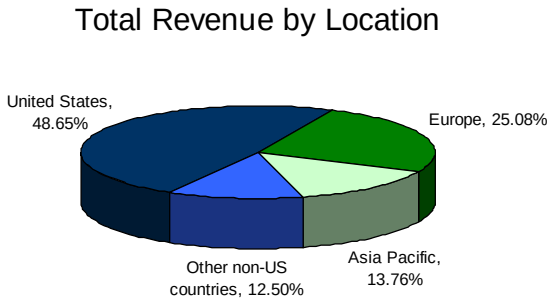
Source: http://investing.businessweek.com

VALUATION RATIOS	2008	2007	2006	2005	2004
Price/Earnings	19	32.2	28.3	23.8	26.9
Price/Sales	2	3.1	3	2.5	2.6
Price/Book	2.4	3.4	3.8	3.6	3.9

Sector Contributions to Total Revenue



The global recession has caused significant decline in demand for Trimble's products. Despite declines, Trimble remains profitable and experienced sales growth of nine percent in 2008, and has the potential for significant growth. In 2008, total revenue increased by 9% to $1.33 billion. This was mainly driven by a $100.1 million (50%) increase in revenue for the Field Solutions segment, and a $9.4 million (6%) increase in Mobile Solutions revenue. Engineering & Construction revenue declined $1.6 million, or .22%, and Advanced Devices revenue declined $.9million, or 1%. Trimble's limited growth is a product of cyclical declines in consumer spending but is in no way a structural decline.



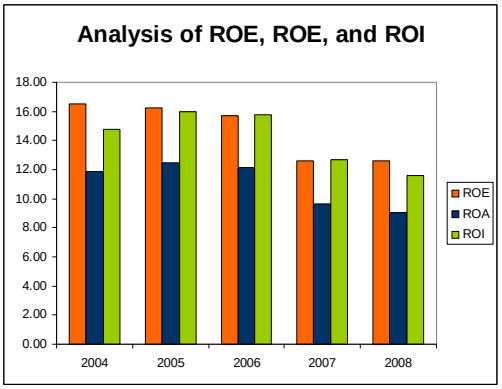
Ratio Analysis (Data from Trimble Annual Reports)

GROWTH RATES	2008	2007	2006	2005	2004
Sales	8.75%	30.01%	21.32%	15.86%	23.65%
Net Income	20.53	13.23	22.16	25.38	75.86
EPS	21.28	5.03	20.13	21.14	59.05

Trimble has historically posted double-digit growth year-after-year. While 2008 saw a steep drop in growth, it is not a structural drop and it is likely that Trimble will be able to post double-digit growth in the future when their end markets open up again. Trimble's EPS is also promising, seeing a dip in 2007 as a result of the @Road acquisition, but looks to provide well for investors.

PROFITABILITY RATIOS	2008	2007	2006	2005	2004
Return on Equity	12.58%	12.64%	15.72%	16.26%	16.50%
Return on Assets	9.03	9.67	12.11	12.47	11.83
Return on Invested Capital	11.62	12.69	15.76	15.95	14.78
Gross Profit Margin	47.30	48.59	48.20	49.42	47.32
Operating Profit Margin	14.30	15.01	14.60	16.30	12.89
EBITDA Margin	18.83	19.47	17.92	18.72	15.52
EBIT Margin	14.01	14.89	15.07	16.44	12.92
Pre-Tax Margin	13.80	14.35	15.01	16.14	12.34
Net Margin	10.64	9.60	11.03	10.95	10.12

In general Trimble's ROE, ROA, and ROI have been falling over the last five years. This suggests that Trimble has had decreased profitability and efficiency with respect to the money shareholders have invested and the current base of assets in addition to the efficiency decreased performance of its investments.



This trend is undesirable but it reflects the increased competition within the market and global recession. The ratios will likely see big jumps when demand turns around in the intermediate-run but could also see a leveling out or slower decline as a result of restructuring.

ASSET UTILIZATION RATIOS	2008	2007	2006	2005	2004
Asset Turnover	0.81	0.79	0.96	1.05	1.04
Inventory Turnover	4.19	4.48	4.18	3.83	4.22
Capital Expenditures / Total Assets	1.05	1.35	2.24	3.63	2.36
Capital Expenditures / Sales	1.22	1.08	1.76	3.02	1.91

Trimble seems to efficiently use their assets. Especially noticeable is Trimble's asset turnover ratio, while it has declined over the last five years, the company is still generating 80 cents of revenue for every dollar of assets. The company also seems to be spending significant amounts on capital expenditures but this is necessary to the development of the company.

LEVERAGE RATIOS	2008	2007	2006	2005	2004
Total Debt / Common Equity	13.29	5.47	0.06	0.11	8.26
LT Debt / Common Equity	13.28	5.46	0.06	0.08	5.61
LT Debt / Total Capital	11.69	5.18	0.06	0.08	5.31
Equity / Total Capital	88.03	94.82	99.94	99.92	94.69
Total Debt / Total Assets	9.27	3.94	0.05	0.09	6.04
Common Equity / Total Assets	69.75	72.04	76.45	77.25	73.09
Total Capital / Total Assets	79.24	75.98	76.50	77.31	77.20
LIQUIDITY RATIOS	**2008**	**2007**	**2006**	**2005**	**2004**
Quick Ratio	1.65	1.41	1.70	1.54	1.55
Current Ratio	2.64	2.23	2.53	2.46	2.46
Cash And Equity / Current Assets	25.07	18.55	28.23	20.49	22.64
Receivables / Current Assets	37.69	44.96	38.77	42.06	40.36
Accounts Receivable Days	64.79	63.92	63.98	65.87	63.28
Inventories Days Held	87.15	81.49	87.41	95.38	86.40

Trimble has taken on significant debt as a result of their 2007 and 2008 acquisitions and has an unsecured revolving credit agreement to borrow up to $300 million. At the end of fiscal year 2008, Trimble had $151 million outstanding under this line of credit.

Trimble remains fully able to pay both its short-term and long-term debts. The quick ratio and current ratios in conjunction with the companies underlying leverage suggests that the company is both short-term liquid and long-term solvent. It should be noted that while the company has short-term liquidity, the company does not have the balance sheet cushion they once did as a result of multiple acquisitions in 2007 and 2008. The company remains in a safe, but not overly strong financial position going forward. The company has the ability to take on more debt but they must be very careful.

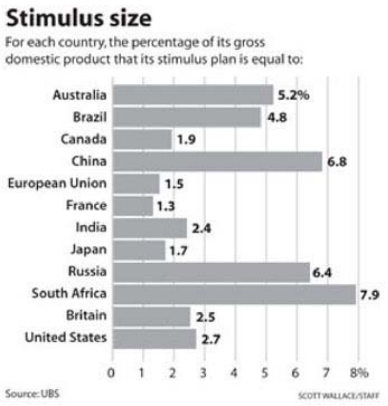
Strategic Recommendations

Current end markets and the global recession have Trimble in a current pinch but they have the capability to put themselves in much stronger market positions in the near future. Trimble needs to seize the opportunities to build market share, and perhaps take on uncomfortable levels of debt, in order to remain a market leader – because waiting-it-out is simply not an option in a technology based industry.

Trimble's pathway to building market presence is linked to a few main developments: national economic stimulus programs, the growing need for infrastructure, and growing agricultural markets.

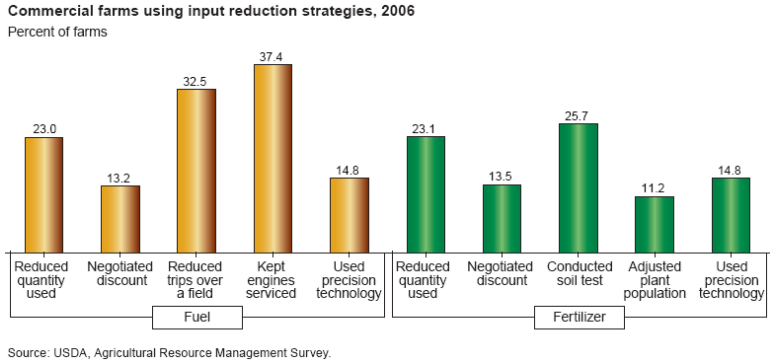
Market Opportunities

In the next few years governments will be spending huge amounts of money on economic stimulus programs to regain economic momentum through the construction of highways, bridges, railways, and energy production. At early stages of these projects, measurement technology will be required. According to recovery.gov, the United



States' economic stimulus program includes billions of dollars set aside for "the largest weatherization program in history by modernizing 75 percent of federal building space and more than one million homes." Furthermore, the plan includes $150 billion for new infrastructure.

Our new world faces increased scarcity in terms of water, food, and energy. Global infrastructure will need significant development beyond what will be included in stimulus packages. Fresh water projects, including dams and water delivery systems, and electrical grids are going to become increasingly necessary and prevalent as global energy demand and resource use continues to climb. These large undertakings will require high-accuracy positioning information to minimize costs, streamline productions, and increase accuracy. Trillions of dollars will be spent on these works globally – leaving the catering markets an huge potential for profits.



Agricultural markets are becoming increasingly more competitive and currently feature underwhelming use of location-based technology solutions. (Shown here) The United States agriculture industry alone is set to have net farming income of $86.9 billion according to the US Department of Agriculture. Total farm expenses are supposed to rise by $38.1 billion (15%); fuel and fertilizer being two increasingly expensive inputs. This represents a significant opportunity for Trimble in its Field Solutions sector.

How Trimble Can Take Advantage

In order to take advantage of these opportunities and entrench itself further in the market, Trimble must continue to develop and acquire new complementary technologies, improve its domestic and international distribution network, and build stronger product awareness

Trimble has proven effective in becoming, and remaining, a market leader by continually focusing on trends within the high-accuracy positioning markets. This has included

acquisitions and in-house development of technology. Trimble boasts some of the most accurate products currently on the market, offering planned compatibility with L5 signals, Galileo's signals (E2-L1-E1, E5a, E5b, etc.), as well as COMPASS and GLONASS signals. This technology will be important on a stand-alone basis for some of Trimble's products but a growing trend will be to have these products bundled within larger solutions.

Trimble must keep its eye on developments like the convergence of Architecture, Engineering, and Construction (AEC) and geospatial technologies for design-build solutions as part of developing Trimble's Connected Site solution offerings. Industry lines are starting to blur; field and office boundaries have started to overlap, surveyors are adding data management capabilities, survey instruments are combining GNSS/GPS capabilities, and GPS enhanced 3D machine control allows machines to design surfaces, grades and alignments in the cab, allowing automatic, accurate real-time blade positioning. It is imperative that Trimble add to its Connected Site solutions as convergence of technologies will help the construction industry by managing time, energy, and material costs.

Improving Trimble's domestic and international distribution networks is essential to their long-term growth. Trimble must improve product adoption in infrastructure projects and precision agriculture. Trimble should hire an outside group analyze the existing marketing and distribution channels to provide direction and assistance. Trimble may also have to increase marketing costs from their 15% of total revenue level. Within international markets especially, Trimble must increase market presence through partnerships, marketing, and acquisitions. Trimble has significant ground to cover in emerging markets, especially China and India, when compared to its main competitors Leica and Topcon.

Furthermore, Trimble ought to actively hunt for the right to set up RTK/VRS networks internationally. Engineers, surveyors, government agencies, firms, and contractors are more likely to use Trimble products if there is an existing RTK/VRS network installed by Trimble because of perceived complementary improvements.

While implementation will be difficult, these ideas should help Trimble more heavily penetrate necessary markets.

Appendix A: Technology

Global Positioning System (GPS)

GPS is a global navigation satellite system (GNSS) that consists of around 24 satellites orbiting the Earth. These satellites have extremely accurate atomic clocks and use multiple radio signals to broadcast location information. The GNSS is made up of the United States NAVSTAR GPS satellites and Russia's GLONASS satellites. China will be introducing the COMPASS satellite system and the European Union will be launching their Galileo satellite system in the near future.

The way that GNSS receivers work is through a 4-dimensional process. Using four GNSS satellites a receiver can figure out its exact location to the millimeter level and the exact time. The receiver first estimates the distance to the first three satellites using equations based on frequency and the time it takes the signal to get to the receive. The fourth satellite serves to fix timing problems caused by atmospheric issues.

The addition of higher frequency bands on newer satellites is to improve accuracy by increasing the power of the satellites which eliminates some of the prior atmospheric interference problems.

Lasers

Trimble's lasers are used in a range of applications to accurately determine level, grade, vertical alignment and distance. Trimble also uses laser technology combined with a unique scanning methodology to capture the shapes of physical structures or scenes and convert them into digital format, known as 3D laser scanning used in high-end civil engineering and survey projects.

Optics

Optics are an integral part of Trimble's surveying instrument – the total station. The instrument enables surveyors to compare locations in relation to one another. Optics allow survey and construction professionals to accurately pinpoint the exact feature to be

measured while lasers measure the distance. Trimble improves the accuracy and productivity of surveyors with sophisticated software to help calibrate these sensitive instruments.

Inertial

Inertial technology senses changes in motion and is primarily used when GPS signals are obstructed. Starting with an initial location based on a landmark, inertial technology uses accelerometers and gyroscopes to determine the successive position based on movement. Inertial technology complements GPS and is currently used in Trimble's applications for aerial photogrammetry, vehicle tracking, high-end road construction and marine purposes.

Real-Time Kinematics (RTK)

RTK uses carrier phase measurements of GNSS satellite signals so that a single reference station can provide real-time corrections for millimeter level accuracy. This is a little bit misleading because in fact, the accuracy of these products is in relationship to the base stations and not a global position. This does mean that if the RTK network is installed correctly that there is incredible accuracy.