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ORGANIC VS. INORGANIC GROWTH

Organic Growth is the rate of a business expansion through a company's own business activity, while **Inorganic Growth** means that the company has grown by merger, acquisitions or takeovers. When a company with help of its efficient management enhances its growth rate it is referred to as organic growth which is also known as **Internal Growth** whereas inorganic growth is attained when a company acquires a technology developing company in order to enhance its competitive advantage and growth rate and is also known as **External Growth**.

Most business enterprises are constantly faced with the challenge of 'prospering and growing their business'. Growth is generally measured in terms of increased revenue, profits or assets. Businesses can choose to build their in-house competencies, invest to create competitive advantages, differentiate and innovate in the product or service line (Organic Growth) or leverage upon the market, products and revenues of other companies (In-organic Growth). Simply put, business expansion with the help of the businesses' core-competencies and sales refers to Organic Growth and is in contrast with Inorganic growth approach where expansion objectives are met through Mergers and Acquisition (M&A).

Apple Inc. is probably an excellent example of Organic Growth. Growth@Apple is driven by trend-setting product innovation. Macintosh, iMac, iPod and the latest technological breakthrough pioneered by Apple is the iPhone. Steve Jobs, Founder, Apple Inc. comments - "Our belief was that if we kept putting great products in front of customers, they would continue to open their wallets." Microsoft, on the other hand is a clear case of In-Organic growth as it has successfully completed more than 100 acquisitions since 1986.

In-Organic Growth or growing through Mergers and Acquisitions provides the following benefits to the business:

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- Helps reduce competition in the market place
- Instantly adds new brands and product/service lines to the acquiring company
- Provides access to fresh customer base and adds new geographical locations
- In many cases, an established marketing channel also becomes available
- Economies of scale are achieved over a period of time.
- A fresh breath of management skills
- Most importantly, time-to-market is substantially reduced which gives businesses a significant competitive edge.
- Ability to deliver unique value propositions.
- Building brands and marketing channels to serve customers better
- Discipline and focus for Growth strategies. The management is willing to take risks for which they prepare and plan well
- Organizational efficiency part of the DNA of the business.

Industry and economic factors play a crucial role in motivating companies to adopt the Inorganic route for growth. Slowing industry growth rate, fragmented industry, too many competitors fighting for the same market share are some compelling reasons which push businesses towards the M&A route. Other than that, economic slump creates opportunities for cash rich companies to get hold of unutilized capacities of loss making competitors at attractive valuations. In 2006, when Dell Computers acquired Alienware, it created news, as it was a deviance from Dell's historical organic growth strategy. In 2007 Dell acquired five companies in a span of four months. The changing market conditions and reduced PC sales made Dell re-think its ideas towards growth without sacrificing their strategy of customer-driven innovation.

The success of Organic Growth is a sure-fire test of the management's ability to share a common vision and deliver the vision. Companies growing organically not only measure their success on financial metrics alone but take careful note of other metrics like customer satisfaction metrics, product quality metrics, logistics and supply chain metrics etc. Some of the typical characteristics of businesses which believe in the benefits of Organic Growth are:

- Customer centricity.

To conclude, both Organic and In -Organic Growth options offer intrinsic value in their own way and the choice is dependant on the market and industry scenario as well as the strategic vision of the business. In fact, a good management principle would be to use a combination of both methods to gain a steady growth pattern in the business.

Using Organic Growth options for things which one does best, and using In-Organic growth measures for expanding the business potential is a potent mix when it comes to gearing up for growth. Sun Executive Vice President of Corporate Development and Alliances, Brian Sutphin, is of the opinion that In-Organic Growth is not necessarily in conflict with the organic growth. He says that acquisitions are meant to complement the organic growth rather than act as a substitute. They bring in talent and technology that was 'elsewhere' and which can now be integrated to boost company performance.

Thus, smaller companies with low risk taking abilities should establish their presence in the market through organic approach to growth and eventually should look to accelerate their growth rate by strategic acquisitions once they have the financial ability to bear the risks that come along with mergers and acquisitions.

Bigger companies on the other hand should allocate their investment capacity between internal investments on enhancing competitiveness and acquisitions to tap into faster growth options by consolidating within the industry, acquiring presence in other markets and bringing in newer technologies and talents that

complement and enhance their competitive position.

MASSTIGE BRAND

It refers to a retail category that includes relatively low priced goods that come with a relatively prestigious brand name; goods and services priced between low-end, mass market items and high-end, prestigious items. Also referred to as Mass Prestige or “Masstige” these goods occupy a sweet spot between mass and class. While commanding a premium over conventional products, they are priced well below super premium or old-luxury goods. In the marketing battle for share of the middle-class wallet, the front runner is a new category of products and services - ‘Masstige’. It is a premium-mass or more literally, a combination of mass market and prestige brands.

Of those retailers that are succeeding in the current climate, a great many of them fall under the category of “**masstige**” — brands and products that have high-end, prestigious characteristics but with prices and locations that make them accessible to a mass consumer audience. These brands have particular appeal to urban consumers, who are always striving to be trendy but aren’t above a bargain. Although **masstige** products in new categories have great potential, they can be attacked by products that offer similar benefits at a lower price or by premium products that deliver a greater number of genuine benefits for a small price increment.

It’s a strategy that enabled Motorola to create a growing niche in a market dominated by Nokia. It’s why FMCG behemoth Unilever is attempting to raise the bar on its positioning for Ponds and Lakme. It’s behind the success of premium offerings from LG and Samsung where their Top-end LCD TVs, are masstige products, with all kinds of value-adds, yet not entirely out of the reach of consumers. It’s the phenomenon which Michael Silverstein, senior VP & Director, Boston Consulting Group, has tracked over years in the US — and it’s already touched the burgeoning upper middle class in India.

Lloyd Mathias, marketing Head, Motorola mobile mentions the recent campaign for MotoFlip, priced at below Rs 4,000 and says “Motoflip is a mass market product and yet it is not positioned as one. The USP is not just price but the aspirational element. The masstige strategy for Motorola has been to combine design and style.” Motorola’s recent drive to position itself as aspirational has been the cornerstone of its success in a market where the brand was in danger of stagnating.

Nitin Paranjpe, Executive Director, home and personal care, HLL, says that there is absolutely no choice but to straddle the pyramid. “We will have to play at the bottom end and the top end as India, is poised to see explosive growth at the top end, making the drive to create masstige brands critical”. In the case of Pond’s, the attempt is to elevate the ubiquitous brand from talc and powder to a premium skin care brand. Thus, Pond’s is being positioned across platforms such as anti-ageing, skin lightening lotion and also day cream, with a slight premium on price.

Nowhere is the phenomenon more visible than in consumer durables and mobile handsets. “Masstige is a differentiated strategy across various product lines,” explains Ravinder Zutshi, deputy MD, Samsung India. Zutshi’s betting big on the LCD market which will show exponential growth in time to come.

While some manufacturers focus on brand name and image, others widen the basket of offerings, so consumers can move up the value chain without shifting loyalties. Thus, even the masstige strategy will need fine tuning. Observers say that in a growing market like India, where consumers’ purse strings are opening up and every brand is fair game, it’s hard to get a clear picture. “Because the market is so buoyant, it’s difficult to separate a fad from a real marketing trend. A clearer picture will emerge only in the next few years,” says Sarang Panchal, Managing Director, AC Nielsen.

POSITIVE DEVIANCE

Positive Deviance grasps that managers must actively look for those extraordinarily successful

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groups and individuals, and brings the isolated success strategies of these “positive deviants” into the mainstream. To make the change method effective it is necessary to ensure the participation of all the members of the community who are associated or exaggerated by the process of change. Positive Deviance model is a six step process.

Make the group “A Leader”.

Reframe through facts

Build a safe learning environment

Concrete on the problem

Provide live examples

Avoid defense response

Benefits

- Positive Deviance approach works best for situations where behavioral and attitudinal changes are called for.
- It assists a role reversal in which experts become learners, teachers become students, and leaders become followers.

Limitations

- It is not suited for change initiatives around proven remedies to technical problems.
- It not easy to create a safe environment that supports innovative ideas.

PERFORMANCE PRISM

A prism refracts light. It exemplifies the hidden complexity of something as apparently simple as white light and decomposes it in its elements. Performance prism demonstrates the hidden complexity of the corporate world. The Performance prism is an innovative performance measurement and performance management framework of the second generation. Its advantage over other frameworks is that it covers all stakeholders of an organization. It primarily works on the investors, customers & intermediaries, employees, suppliers, regulators

and communities. It considers the wants and needs of the stakeholders, as well as the organization as a whole. The reciprocal relationship with each stakeholder is examined by performance prism.

The Performance Prism is based on the belief that those organizations aspiring to be successful in the long term within today’s business environment have an exceptionally clear picture of who their key stakeholders are and what they want. They have defined what strategies they will pursue to ensure that value is delivered to these stakeholders. They understand what processes the enterprise needs if these strategies are to be delivered and they have defined what capabilities they need to execute these processes. The most sophisticated organizations amongst them have also thought carefully about what it is that the organization wants from its stakeholders. Employee loyalty, customer profitability, long term investments, etc. In essence they have a clear business model and an explicit understanding of what constitutes and drives good performance.

Components of the Performance Prism

- Stakeholder Satisfaction.
- Stakeholder Contribution.
- Strategies
- Processes
- Capabilities

Performance prism helps to gain stakeholders satisfaction, what strategies should be followed to satisfy the wants and the needs of the key stakeholders. It also highlights the critical processes one need to execute these strategies. It also identifies capabilities required to operate and enhance the critical processes. It also emphasizes the stake holder’s contribution.

METAPLAN

It is used as a facilitation method for groups and as a communication model, in which opinions are developed, a common understanding is built and objectives, recommendations and action

plans are formulated to focus on a problem and its possible solutions. “Moderators” (a kind of facilitators) administer the groups and ensure that the communication is effective so that cooperation and understanding is developed. The objective of Metaplan is to provide the group with the right sort of communication tools at the right moment. This will help to achieve the organizational goal by systematically breaking up larger problems into its smaller constituent parts. The involvement of all participants can be maximized by breaking larger groups into smaller ones. The plenary group sets the task and reviews the results. Sub-groups focus on the sub-tasks and collect the ideas. Mini-groups actually work on the issues contained within each subtask.

The Metaplan Process

STAGE I Program Introduction which helps in setting the objectives.

STAGE II Create individual input units where ideas are generated.

STAGE III Collect individual input where ideas are brainstormed.

STAGE IV Divide the participants into subgroups to indulge contribution at each level.

STAGE V Discussion at each level for result oriented objectives.

STAGE VI Share the results where each group presents their views

STAGE VII Prioritizing the outcomes to attain the set objectives.

STAGE VIII implementation of the set prioritized outcomes.

STAGE IX Presentation of the discussion in the form of end results.

STAGE X Conclusion and Summary to execute the action plan

Applications of Metaplan

The method is used for facilitating large information markets or conferences, as well as

facilitating small management teams. Metaplan can be used in the following areas:

- Cause analysis
- Building momentum or support for a change initiative
- Setting priorities
- Introducing people in seminars
- Interconnectedness analysis
- Evaluation
- Creating, collecting, gathering, structuring, storing, visualizing of ideas

Benefits of Metaplan

- It rigorously plans and develops a tight and detailed scenario with clients.
- It involves all the people who play a part in implementation issues. This influences the way that they will act in the analysis phase and in the decision-making process.
- It avoids long drawn-out, messy, inconclusive and time-wasting process often found in participative decision-making.

Limitations of Metaplan

- People may be influenced by what other people have already voted
- Some handwriting on the cards can be difficult to read.
- Voting sessions are public for everybody to see what other people vote.
- Some people may be afraid to speak in public, although they may be competent.
- A method-show and focusing too much on the structure of the Metaplan technique must be prevented.
- Experienced and capable facilitators are needed.

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- The costs of using specialized materials and equipment and facilitators.
- Other people may be speaking too much. This over-profiling of themselves may annoy other people.

FACILITATION STYLES

The Facilitation Styles distinguishes between 6 possible means of analyzing a range of possible beneficial interactions between a client and a helper. Intervention is defined as an identifiable piece of verbal and/or non-verbal behavior that is part of the practitioner's service to the client. Six Facilitative Interventions includes two main categories:

- **Authoritative Interventions.** The practitioner takes a more dominant or assertive role, taking responsibility for and on behalf of the client.
 - **Prescriptive Intervention** which directs client by giving advice and direction.
 - **Informative Intervention** it seeks to give knowledge, information and meaning to the client, by giving instruction.
 - **Confronting Intervention** helps challenging behavior or attitude of the client by direct feedback.
- **Facilitative Interventions.** The practitioner seeks to enable clients to become more autonomous and take more responsibility for them.
 - **Co Cathartic Intervention** helps client to express and overcome powerful thoughts or emotions. Empathizes.
 - **Co Catalytic Intervention** helps client to reflect, discover and learn. Asks questions.
 - **Co Supportive Intervention** builds up client confidence praises, values and supports the client.

Applications of Facilitation Styles

- It helps in learning, teaching and in knowledge management.
- It is applicable in coaching, mentoring, mediation and consulting

Benefits of the Facilitation Styles Model

- It creates awareness of current and possible helping styles.
- It is a framework to communicate and discuss teaching or consulting styles.
- This can be used at both individual and group level.

Limitations of the Facilitation Styles

- To be able to change in facilitation style towards autonomous modes requires shifts in behavior, values and skills.
- From lecturer to facilitator, from expert to mentor, from control to risk, from structure to ambiguity.
- Not all people will be ready for advanced ways of help. "I just need you to tell me what to do now".

WIKI BABEL

This is a community collaborative environment in which automatic translation of a pre-specified set of source documents to a target language is made available, which can be corrected, changed, added to (as a wiki) by a user community for common purposes. Such modified documents become a good usable repository of knowledge in a target language, and at the same time provides training data for making the automatic translation better. The technology has been developed by the MSDN community for correction of automatically translated source MSDN articles (primarily, product literature, user-guides, experience scenarios, Q?A, etc., which are primarily produced in English) from English to Portuguese, for the Brazilian MSDN community. The development had been largely successful with several thousands of users having

contributed up to a few million corrections over last six months, making the MSDN documents readily available in Portuguese.

EVE

The robot, known as Eve, uses advanced artificial intelligence combined with innovative data mining and knowledge discovery techniques to analyse the results of pharmacological experiments it conducts itself. By relating the chemical structure of different compounds to their pharmacological activity, Eve is able to learn which chemical compounds should be tested next, bringing a degree of predictability to drug screening procedures that, until now, have tended to be a bit hit and miss. Over time, Eve will learn to pick out the chemical compounds that are likely to be most effective against a certain target by analysing data from past experiments and comparing chemical structures to their pharmacological properties. That should help scientists and pharmaceutical companies identify more effective compounds to treat different diseases, allowing them to find drug leads in a fraction of the time and at a fraction of the cost of current methods. Eve could minimise the need for random testing of chemical compounds. Currently, when a new drug is sought pharmacological researchers conduct a blind study of tens or hundreds of thousands of chemical compounds, applying them to an assay for a disease. The results of those tests determine the so-called Quantitative Structure-Activity Relationships (QSARs) that relate the structure of a chemical compound to its pharmacological activity. Exhaustive testing like this is time-consuming, costly and generally has to be repeated each time a new drug is sought. Eve offers a more “intelligent” approach. The robot conducts the QSAR testing in assays itself, analyses the results and stores the data for future use. Over the course of numerous experiments, Eve learns which chemical structures are likely to be effective in specific assays. So, instead of choosing compounds to test at random, it can pick ones that are more likely to be effective. New data mining techniques lie at the heart of Eve’s groundbreaking drug discovery capabilities.

MULTI-GIGABIT TECHNOLOGY

The Georgia Electronic Design Center (GEDC) at the Georgia Institute of Technology has produced a CMOS chip capable of transmitting 60 GHz digital RF signals. This chip design could speed up commercialization of high-speed, short-range wireless applications, thanks to the low cost and power consumption of complementary metal oxide semiconductor (CMOS) technology. Among the many potential 60 GHz applications are virtually wireless desktop-computer setups and data centers, wireless home DVD systems, in-store kiosks that transfer movies to handheld devices in seconds and the potential to move gigabytes of photos or video from a camera to a PC almost instantly. The GEDC-developed chip is the first 60GHz embedded chip for multimedia multi-gigabit wireless use. The chip unites 60GHz CMOS digital radio capability and multi-gigabit signal processing in an ultra-compact package.

SEMANTIC WEB(2.0/3.0)

The Semantic Web is an element of Web 3.0 which is seen as the third generation of intelligent Internet-based services. The third generation is pegged to include such complementary services as natural language search, data mining and machine learning. The semantic web would pick out patterns and overlaps, and turn over a snapshot that delivers an intelligent overview—much like an up-to-date wiki page on the subject that does not depend on the editors, but on the more active and up-to-date results on the Web.

MYKEY FROM FORD LIMITS YOUR DRIVING EXPERIENCE

Ford have designed a very new system called MyKey which is intended to assist in producing a safer driving experience for new drivers, who at times seem to think they are indestructible behind the wheel and that the laws do not apply to them, only others. The MyKey system enables parents to limit the speed of the vehicle and also the audio volume. The speed restriction is the

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obvious safety precaution, as when the speed, which has been selected, has been reached, the car will refuse to go any faster. The volume controller is merely an extra, but one which many of the public will be thankful for, eradicating the sound of five sub woofers blaring out heavy bass at every set of traffic lights with the windows rolled down.

Anyway, the MyKey system is expected to become standard on the Ford Coupe from as early as 2010, and other models will also adopt this technology including the Lincoln and Mercury. Owners will have the option to program a key to limit both top speed and audio volume, where the volume will be restricted to 44% total volume, and the top speed of the vehicle limited to 80mph. This will definitely assist in reducing crashes caused by reckless driving, so anything which is contributing to fewer accidents and fewer lives lost is definitely a good thing which we should all be happy enough to accept. The system will also include speed alerts, which chime at 45, 55 and 65 mph respectively. Not only is this good for safety reasons, but it is also far better economically. Finally, the system will warn the driver of when the fuel has reached 75 miles remaining, instead of the usual 50mph, in order to prevent road users becoming stranded in the middle of nowhere.

MAPLE PHONE

Transforming a popular product into a wooden version is a bizarre development, but the cell phone has just undergone such treatment. Two Koreans, Hyun Jin Yoon and Eun Hak Lee have developed the Maple Phone as they prove that phones do not need to follow the same trend of plastic products. The wooden phone exhibits a touch sensitive keypad and also a camera. For the touch pad to work correctly, we believe that some different materials are used, as this would be impossible based on wood alone. The phone is great from an environmental perspective, since wood is a natural source and completely renewable. Perhaps this will pave the way for future wooden products, for example wooden MP3 players, wooden laptops, wooden televisions etc.

The wooden phone does not look particularly appealing, and will no doubt be heavier than the traditional plastic. At the moment, it looks like a block of wood with some numbers and stickers placed on the front. Nevertheless it would be great to get our hands on one and compare it with a more conventional plastic cell phone.

SOTAB (SPILLED OIL TRACKING AUTONOMOUS BUOY)

Osaka University have engineered a sophisticated new robotic buoy which aims to minimize sea pollution. The robot aims to reduce oil spillages aboard oil tankers. The prototype, termed SOTAB (Spilled Oil Tracking Autonomous Buoy), is a 110Kg GPS-enabled robot which measures 2.7m in length and 27cm in diameter. The concept allows the robot to be dropped into the sea automatically when an oil spillage occurs. Unfortunately the robotic buoys will not be instilled for a further three years, as it will take that duration of time to develop them from the labs into productive use.

Naomi Kato, professor of Submersible Robotic Engineering in the department of Naval Architecture, developed the system and has described it as able to "conduct education and research on underwater robotics, biomechanics on aquatic animals and its application to engineering, computational hydrodynamics of viscous flow fields.

In layman's terms this essentially translates into the fact that the buoy can monitor the oil flow by day or night via four highly sensitive cameras designed to pick up on black shadows caused by oil leaks. The robot will stay submerged at 10metres, and during the night its lights will be turned on to offer 24 hour monitoring. The buoy will record speed of the current, water temperature, wind direction and velocity which will be computed and humans will be informed of the extent of the leak and which direction and how fast the leak is spreading. Sounds like a great idea, and will definitely be put into good use in three years time. It's just a shame it has taken so long for such a product to be engineered.

APPLE AND SONY TEAM UP FOR VIDEO GOGGLES

Viewing goggles from the likes of myvu and Vuzix have yet to become commonplace, mostly due to the fact that you would look entirely out of place whilst wearing them on the train to work. There is a rumour that Apple are developing a set of video goggles, which will allow you to view video files through them, which can be taken from an iPod or any other Portable Media Player. It is also thought that Sony will be partnering with Apple to create the ideal technology for the screen which resides inside the goggles. I for one am excited about this, as Apple and Sony joint venturing will no doubt result in a fantastic end product.

If the goggles receive as much attention as the iPod managed five years ago, it will be a massive product and one which could follow in the footsteps of the iPod, albeit a far more ambitious creation. We will need to wait and see if this speculation comes to fruition, and hopefully one day portable video viewing will be possible via a trendy set of goggles, not something similar to Cyclops from X-Men.

BIXI-SOLAR BICYCLES INVENTION OF 2008

Time Magazine has listed the solar bicycle of Canada as the best invention of 2008. In Canada and the US this rental bike project received a welcome boost when Time magazine proclaimed the Montreal system which was named Bixi as one of the best inventions of 2008. This is a new project of modern discovery that is going to come for public use from the spring of 2009. These specially built bicycles will be available for rent and run by the solar energy from 300 solar powered docking-stations throughout six boroughs of the Metropolitan Districts of Canada.

The invention of Bixi will be a solution for global warming as they use only solar energy unlike the billions of cars now in use releasing harmful gases which result in global warming and many human

diseases and many kind of pollutions. The bicycles have been designed in such a way containing tons of sealed components to resist the savage beatings that the public would inflict upon them. These bikes run by solar energy are extremely sturdy, equipped with RFID tags to keep track of them and parking facilities are provided with solar panels. Surely, this will be another revolution in the transport industry competing the use of taxi.

FLEXIBLE FIBER

Fiber-optic cable has to lie fairly straight to carry a strong signal, so it's difficult and expensive to install in apartment buildings. Corning's Clear Curve works out this kink by adding a protective rail around the skinny glass core, so you can bend, twist and turn the lines in and out of tight corners without degrading the connection. The innovation has Verizon and other telecoms—ever eager to expand their data services to new addresses—jumping for joy.

ROADRUNNER -WORLD'S FASTEST SUPERCOMPUTER

Scientists developed the world's fastest computer that is able to perform 1,000 trillion operations per second. The computer, called RoadRunner, is twice as fast the previous fastest computer *IBM's Blue Gene system*, which was considered to be the fastest supercomputer, being three times faster than other supercomputers in the world. The RoadRunner was developed by the engineers from the Los Alamos National Laboratory in New Mexico, US, and IBM Corp. from 13,000 of computer chips. RoadRunner is **the world's first petaflop computer**, meaning that it can perform 1,000 trillion operations per second. The daily performance of the computer *can be compared to the calculations made by 6 billion people using a hand-held computer 24 hours a day for 46 years.*

It took more than six years to develop a computer technology like this. *Built from computer chips used in popular video game PlayStation 3* and 12,960 cell engines, it can boast **80 terabytes of memory**. The interconnecting system takes 6,000

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square feet, having 57 miles of fiber optics and weighs 500,000 pounds. The supercomputer will be used for nuclear weapons research, but will have a numerous applications in medicine and science, engineering and other fields. It has a great potential to help in *developing biofuels, new drug therapies and even vaccine for the HIV virus, solving global energy tasks and find a clue to the origins of the universe.*

The RoadRunner is now placed at the IBM research laboratory in Poughkeepsie, N.Y., but will be moved to the Los Alamos National Laboratory, where it will be initially tested for unclassified work and later used for nuclear weapons work and other government activities.

GOOGLE EARTH OFFERS 3D MAP OF MARS

Google presented new software of its already popular **Google Earth**. Now Mars fans have the ability to explore the craters, volcanoes and even the places that Mars Pathfinder visited on the red planet. This is all available with the help of the new version of Google Earth desktop application. The entire Mars map is composed of **1,000 gigabytes of data** stored from a collection of Mars probes, **Viking orbiters**, launched by NASA; **Mars Express orbiter**, launched by Europe; and 6 landers, including NASA's twin rovers. All the probes allowed creating a 3D view of the red planet at many different scales.

The latest invention from Google is available to virtually anyone who has a computer. Yet, Hancher mentioned that the new tool will also allow researchers carry out their studies of certain areas on Mars based on available data, including **infrared images** and **mineral maps** created by orbital spectrometers. Google looked forward to make its software interactive, making it possible for users to draw lines, embed clips, add text and pictures. In addition, scientists have the possibility to add new content. The added data must be encoded in KML to be correctly overlaid on the

globe. Currently adding information to the Mars layer is manual and according to Hancher only several hundred images have been added from the **HiRISE camera** mounted aboard NASA's Mars Reconnaissance Orbiter, which is the most powerful camera scientists have even sent to another planet.

i-LIMB-BIONIC HAND

The **first bionic hand** in the world that was launched into the market is considered one of this year's top inventions. The developer of the **i-LIMB** hand is Touch Bionics, a company based in Livingston. Time magazine included the bionic hand in its list of top 50 innovations along with probably one of the groundbreaking **inventions** of this century, **Hadron Collider**. The invention was settled on the 14th place, surpassing NASA's **Mars Exploration Rover**.

It took the developers **20 years** to create the i-LIMB. Each of the five fingers on the bionic hand works separately, which makes the invention more versatile than other artificial hands created earlier. It is worth mentioning that previously developed artificial limbs could perform only uncomplicated opening and closing motions, the company's official website reports. The new invention can perform a wide range of actions. For example, the i-LIMB can perform a **credit-card grip**, being bale to hold narrow objects. In addition, the bionic hand has a power hold for bigger objects, such as, for instance, mugs.

One of the key features is the material from which the bionic hand is made of, i.e. **high-strength plastics**, which make the i-LIMB lightweight, robust and highly appealing to patients. Developers made it possible for the fingers to be unscrewed from the hand, so it would be easier to service. Previous artificial hands had to be completely removed in case they broke, which was rather uncomfortable since the amputees had to wait for weeks until their prosthetic hand is fixed.