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VEPACHEDU EDUCATIONAL FOUNDATION

The Andhra Journal of Industrial News

IP and Industry News

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Issue 79 Contents:

The Undruggables

There is no low-hanging fruit available anymore and incremental advances against previously drugged targets are simply no longer going to be rewarded in the marketplace. In addition, about 70 to 80 percent of all human proteins are beyond the reach of the two established classes of drugs. Biologics are a range of drug products including therapeutic proteins, vaccines, and blood components, which are restricted to extracellular targets that make up less than 10 percent of human proteins, because of their size. Small-molecule drugs can cross cell membranes to target proteins inside cells, but only about 12 percent of those proteins have hydrophobic pockets suitable for tight binding of this class of drugs. That leaves around three-fourths of potential protein targets unapproachable by current drugging methods (Clin Cancer Res, 13:7264-70, 2007). A few companies like Aileron, Anchor, Forma, NeurAxon etc. are taking risk and doing research in this area of undruggables.

http://www.the-scientist.com/article/display/57785/#ixzz13wK0RhC1

As personalized medicine grows in importance as new stakeholders enter the fray, the result is a changing dynamic for the entire industry. As a result of this shifting landscape, competitiveness is on the rise as drugmakers scramble to find the right partners to develop diagnostics, regulators place more scrutiny on laboratory-developed tests and third-party payers demand to see more evidence of treatments that can deliver results for their customers.

http://www.drugdiscoverynews.com/index.php?newsarticle=4296

The premium placed on innovation, new targets, and being first in class is very apparent. At the same time, populist and left oriented governments', around the world and in emerging markets, interest in forcing new drugs to be available at cheaper and affordable prices to the poor is not going to help the innovator, while the greedy generic industry's vested interest, in the name of helping poor, in snatching innovators' novel drugs increases the cost of doing business for innovators, which ultimately will be transferred to the patient. As a consequence, both the poor and the rich, and all have to deal with undruggables without incentives and protection for innovators.

Success breeds complacency and vulnerability to attack. Pharma and medical devices are clearly suffering as a result of their long run of success. That success was based on decades of innovation addressing unmet medical needs, which justified high margins that afforded more investment in people and infrastructure to keep the process accelerating. With the low hanging fruits gone, the need to invest more in research and development has increased tremendously; while the FDA approval process became long and arduous, which only enhanced the cost of bringing a new drug to market.

In addition, society advances through innovation, and through innovation, the successful and comfortable are threatened. Success indeed becomes a reliable predictor of failure. At very least there is much pain and discomfort. The new idea displaces the established. As innovation has accelerated in our time, even the recently established become vulnerable and may be gone a decade after founding. Sailing ships, steam engines and printing presses with lead type had a longer run. While the principles of creative destruction and disruptive innovation apply more broadly, their role in business is compelling at the moment. http://www.drugdiscoverynews.com/index.php?newsarticle=4227

It is not enough to invent a potential new miracle drug. If there is no efficient way to get the therapeutic to exactly where it's needed--without harming healthy cells--then the drug is no "miracle" at all. If the drug produces so many unpleasant side effects that patient compliance becomes an issue, development is far from over. This remains true not only with drugs that are in development, but even

those that are already on the market. Just because it has been approved by the FDA and is being successfully and safely used by consumers does not mean development of that drug is over. What new delivery methods bring to the table are not only unique ways to continue innovating even after the therapeutic goes off patent, but the ability to give relief to patients who may be suffering from drug side effects. http://www.fiercedrugdelivery.com/special-reports/top-5-game-changing-drug-delivery-technologies

Global Pharmaceutical Sales

Revenue from global prescription drug sales should increase 5 percent to 7 percent next year, reaching at least $880 billion, fueled by new drugs and rising sales in developing countries, according to drug data firm IMS Health. In the U.S., the world's biggest pharmaceutical market, growth is expected to be about 4 percent, for a total of about $325 billion next year. Prescription revenues in Canada and in Europe's five biggest markets — Germany, France, Italy, Spain and the United Kingdom — will grow at just 1 percent to 3 percent next year. China will grow 25 percent next year moving China past Germany to become the world's third-largest pharmaceutical market, with more than $50 billion in sales next year. Emerging markets are very small today from a pharmaceutical sales standpoint, e.g., in China, the top Western pharmaceutical company Merck has about a 3 or 4 percent market share of the total therapeutics in that market.

Diabetes: Indian Biocon and American Pfizer

Diabetes is one of the fastest-growing and largest disease burdens globally, with nearly 230 million diabetic patients worldwide and 3 million deaths attributed to the disease annually. Although Insulin is the primary response to address Diabetes and is included on The World Health Organization's (WHO) Essential Medicines List, it remains inaccessible on an uninterrupted basis in many parts of the developing world. The WHO estimates that 70% of people afflicted with Diabetes live in low and middle income countries, with India alone accounting for 40 million patients. It is estimated that Diabetes will affect 400 million people globally by 2030 (1), with an expected 1 in 5 diabetics in India. The Diabetes pandemic is also alarming in developed countries, including the United States, which has 18 million diabetic patients and a healthcare cost burden of approximately $200 billion per year associated with the disease. By 2030, the number of people living with Diabetes in the U.S. is expected to increase to 30 million.

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Biocon, Asia's premier biotechnology company, and Pfizer Inc. the world's leading biopharmaceutical company, announced that they have entered into a strategic global agreement for the worldwide commercialization of Biocon's biosimilar versions of Insulin and Insulin analog products: Recombinant Human Insulin, Glargine, Aspart and Lispro. Pfizer will have exclusive rights to commercialize these products globally, with certain exceptions, including co-exclusive rights for all of the products with Biocon in Germany, India and Malaysia. Pfizer will also have co-exclusive rights with existing Biocon licensees with respect to some of the products, primarily in a number of developing markets.

Data Exclusivity in Poland

The data exclusivity period applicable to pharmaceuticals for human use is to be extended by the introduction of an 8+2+1 rule to replace the current 6-year exclusivity period. The changes are required under EU law and are being introduced as part of the health pack currently being prioritized by the Polish Parliament. For eight years from the date a product first receives marketing authorization in an EU member state, applicants to register a generic drug may not refer to the information of the original marketing authorization holder relating to (pre-) clinical testing. For those eight years plus a further two years, a generic product may not be marketed, even if it has been authorized. There is an additional protection for another year for a new indication registered.

Venter's New Venture: Synthetic Genomics

Exxon Mobil is giving $300 million in research financing, BP has invested and the pharmaceutical giant Novartis will work with Dr. Venter. Craig's Synthetic Genomics is exploring the use of algae to produce gasoline and diesel fuel, food oils, and, possibly, other edible products, use of microbes that might help turn coal deposits into cleaner-burning natural gas. A Malaysian conglomerate Genting invests to improve oil output from palm tree, a “gasoline tree.” Novartis will work with Dr. Venter to synthesize influenza virus strains as a potentially faster way to make flu vaccines. Venter is turning to writing the genetic code - his Synthetic Genomics may create living creatures — bacteria, algae or even plants — that are designed from the DNA up to carry out industrial tasks and displace the fuels and chemicals that are now made from fossil fuels. He announced in May that his team had created what, with a stretch of imagination, media called the first synthetic living creature - a million-letter genome of a

simple bacterium, the longest synthetic piece of DNA produced so far, and transplanted it into a slightly different type of bacterium, which then began to replicate - synthetic bacterium called Synthia. The Vatican praised the work as a potential way of treating diseases, saying it did not regard the synthesis of DNA as the creation of life; while President Obama immediately asked his bioethics commission to examine the potential benefits and risks of synthetic biology. Synthia's creation took 15 years and cost $40 million. The synthetic bacterium is not robust enough for industrial production of chemicals. Synthetic Genomics has about 130 employees. But much of its research, including the development of the synthetic cell, is done at the J. Craig Venter Institute. Synthetic Genomics pays for about 25 of the institute's roughly 300 researchers, and has rights to their results. The rest of the institute's funding comes mainly from federal grants and its endowment. Dr. Venter, who turns 64 in October, has not worked directly with test tubes or gene sequencers for decades. He only charts the course and steers. http://www.nytimes.com/2010/09/05/business/05venter.html?hp

Globish, a New English Language, Rules the World

English has been invading international settings thanks to the British Empire. In 1919, the Treaty of Versailles was written in English as well as French. Later leg-ups for the language include the rise of American multinationals, the fall of the Berlin Wall, the coming of the internet and the opening of China, says Nigel White, head of international training and development at the Canning communications company.

Today about one in four humans speaks at least some English, according to the British Council. Many more want to learn it. Robert McCrum, co-author of The Story of English, hails "the apparent realisation of one of mankind's oldest dreams – the end of Babel".

Of course, most of these new speakers don't speak proper English. They speak "Globish" – a simple, dull, idiom-free version of English with a small vocabulary. Most Europeans at my conference, for instance, spoke Globish. Speakers of Globish often struggle to understand native English. They are confused by idioms, half-sentences, references to ancient TV programmes, or simply the British habit of not saying what you mean. Hilary Moore, a senior trainer at Canning, notes that Germans in particular don't understand that when Britons say, "Well, it wasn't fantastic," they might in fact mean, "It was dreadful." And some native speakers have impenetrable accents. "Nobody understands the Irish," notes White. Foreigners often sit in English-language meetings getting tired, confused, jealous and irritated. A

Dutch friend of mine describes a meeting in which 10 Dutch executives speak English to accommodate a single Briton – who, my friend grumbles, "sits there feeling superior".

Because English-Globish misunderstandings are common, experts often warn that native English-speakers will suffer in this new world. However, native speakers simply need to learn Globish. White says a half-day course can teach native speakers to speak slowly, without irony, and to bin confusing verbs like "to put up with"….In a Globish world, the native English-speaker triumphs. When you need to drop into Globish, you can. But when subtlety or speed is required, you beat them. Moore says native English-speakers often steer conversation, using phrases like, "Can I just jump in here..." and, "So what we're saying is..." Foreigners sit mutely, trying to follow what's being said….
http://www.ft.com/cms/s/2/3ac0810e-d0f0-11df-a426-00144feabdc0.html

Unmanned Cars

Google has tested cars that can drive themselves without human intervention across thousands of miles of public roads. A combination of video cameras, radar sensors and lasers allowed the cars – which Google says were "never unmanned" – to pilot themselves in busy traffic. Google has already mapped and photographed hundreds of thousands of miles of roads around the world for its Street View service, including road signs and other information which may be useful for its driverless cars. "Larry [Page] and Sergey [Brin] founded Google because they wanted to help solve really big problems using technology," Google wrote on its official blog.

Biomarker Panel Identifies Prostate Cancer

Researchers in England say they have discovered a set of biomarkers that can distinguish prostate cancer from benign prostate disease and healthy tissue with 90 percent accuracy. This preliminary data, if validated in larger ongoing studies, could be developed into a serum protein test that reduces the number of unnecessary biopsies and identifies men who need treatment before symptoms begin. http://www.fiercebiotech.com/press-releases/biomarker-panel-identifies-prostate-cancer-90-percent-accuracy

Another study, published in PloS ONE, looked at the protein microseminoprotein-beta (MSMB), which is produced by normal prostate cells and regulates prostate cell death. If a man has a less-than-normal amount of MSMB, he is more likely to develop prostate cancer. Or, at least, having less of the stuff is linked to a genetic change associated with an increased risk.

http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0013363

New Light Bulb

The electronics company Phillips has produced an light emitting diode (LED) light bulb. The LED bulb can not only produce the same amount of light as a 60 watt incandescent (standard) bulb but it is also as economical as a compact fluorescent bulb but without using mercury. It also lasts a lot longer. There is already a 40 watt LED bulb available, but the 60 watt took longer to develop. The EnduraLED bulb as it is called is made up of a cluster of LED's that together produce 806 lumens of light with just 12 watts of electricity. The expected lifespan is 25,000 hours which is in marked contrast to a compact fluorescent at 8,000 hours and an incandescent bulb at 1,000 hours. This equates, say the company, to a total saving of £85 over the lifetime of the bulb.

Jobs: Top Federal Agencies

The following list represents the agencies honored as the Top 10 Large Federal Agencies for 2010:

1. Nuclear Regulatory Commission
2. Government Accountability Office
3. Federal Deposit Insurance Corporation
4. Smithsonian Institution
5. National Aeronautics and Space Administration
6. Social Security Administration
7. Department of State
8. General Services Administration
9. Department of Justice
10. Intelligence Community

The Top 10 Small Federal Agencies for 2010 include:

1. Surface Transportation Board
2. Overseas Private Investment Corporation
3. Congressional Budget Office

4. Federal Mediation and Conciliation Service
5. Peace Corps
6. National Endowment of the Humanities
7. Federal Trade Commission
8. National Transportation Safety Board
9. National Endowment of the Arts
10. Commodity Futures Trading Commission

These rankings not only show which agencies are successful, but also reveal which ones need improvement and better management. To apply for a federal job, visit the official job board of the public sector, USAJOBS.gov. Or, visit Military.com's Careers channel to search for military-friendly, public sector employers.
http://www.military.com/Careers/Content1?file=careersArticlesAssociatesFederalAgencies2010.htm&area=Reference&ESRC=careers-b.nl

Hands Only CPR

With a big ad campaign about "hands-only" CPR, more people used the hands-only method as time went on, with 13% survival compared with 8% for traditional CPR, according to a study appeared in the Journal of the American Medical Association. And people were more likely to live than when rescuers used traditional CPR. This form of CPR uses a series of rapid pushes on the chest to circulate blood. There is no pause for "rescue breaths," as in traditional CPR. In 2005, when the campaign began, about 28% of bystanders tried to use CPR when someone nearby had a cardiac arrest. In 2009, after the campaign, 40% tried CPR.

Stem Cells from Skin Cell

Embryonic stem cells can turn into any type of cell. Scientists have used skin cells to create stem cells much like those that come from embryos. The new type of stem cell is called an induced pluripotent stem cell (iPS cell). Scientists treated skin cells with modified forms of ribonucleic acid that directs the cells to make the proteins needed to create iPS cells. This method produced stem cells quickly, researchers said. The research appeared in the journal Cell: Stem Cell.

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Om! Asatoma Sadgamaya, Tamasoma Jyotirgamaya, Mrityorma Amritamgamaya, Om Shantih, Shantih, Shantih!
(Aum! Lead the world from wrong path to the right path, from ignorance to knowledge, from mortality to immortality, and peace!)