The Merging of Digital Technology and Health Care

There have been many innovations in medicine during the past several years, and we believe we are on the cusp of another one: The use of the Internet and data to help keep people healthier. While the Internet has been mainstream for well over 20 years now, health care companies are starting to uncover potential uses of digital technologies in combination with new medical breakthroughs, such as the mapping of the human genome. In addition, we believe that wearable and implantable devices, such as smart watches and pacemakers that interface with smartphones, will have a visible place in the digital health care landscape. We believe many of our companies are well-positioned to take advantage of this potential growth trend. While there are only a handful of these products available now, we think digitally enabled products will help drive growth in health care for the long term. We currently recommend that health care stocks comprise 15% of a client's diversified equity portfolio and technology stocks comprise 19%.

Investment Summary:
- Genetic testing should become more common and lead to better and more effective drugs.
- We are starting to see medical devices that diagnose health issues before the patient even knows he or she is sick.
- The merging of the Internet and medical technology will likely help long-term growth rates for many companies.
- We recommend clients explore our Buy-rated names in this sector as many are actively developing products that use data or the Internet, or already have products available.


The first human genome map (a comprehensive genetic "road map" showing how all the DNA in a person is structured) cost approximately $3 billion about 15 years ago. Now DNA testing kits are available for as little as $99 dollars and genome maps for around $1,000. Therefore we believe these tests will become more common as people seek information about their genetic makeup. For example, the actress Angelina Jolie, through genetic testing, discovered she had an 87% chance of developing breast cancer. She publicly elected to have preventive surgery, which made millions of people aware of genetic testing. We think this testing will become increasingly frequent, which could ultimately help extend lives.
**Better Data Leads to Better Drugs**

Since we think genetic testing will become relatively common in the future, this could lead to databases of thousands, and possibly millions, of individual genes and genetic mutations. We believe scientists should be able to develop new innovative drugs based on these data, and doctors should be able to prescribe more targeted therapies based on an individual's genetic makeup. We believe that over time, targeted therapies could be a significant contributor to earnings growth of biopharmaceutical companies.

**A Medical Device May Know You Are Sick Before You Do**

We are also seeing medical devices that can or will be able to diagnose problems as they are occurring or even before they begin. Technologically enabled products now help diabetics manage and continuously chart their glucose levels on a device as opposed to pricking one's finger several times a day. Implantable devices can monitor a patient’s heart, download that data to a smartphone, and send the information to the patient's doctor for analysis. We believe that wearable devices, such as smart watches, will be able to monitor a patient's vital signs, such as blood pressure, and help doctors diagnose potential problems before they become more serious.

We see companies (e.g. Novartis) using advances in technology to develop medical products, such as smart contact lenses that monitor glucose levels in diabetics. Many medical device companies such as Medtronic, Johnson & Johnson and others are developing these products themselves or in partnership with tech giants such as Apple, Alphabet (Google) and IBM. These products include surgical robotics, pacemakers that transmit heart data, and complex data analytics that can help doctors prescribe the right medicine at the right time.

Advanced uses of electronic medical health records will also play a role, in our view, in aggregating, warehousing and analyzing the data generated by individual patients and similar patient groups (e.g., patients with similar genetic makeups to help determine an optimal treatment regimen for specific diseases).

**The Merging of Digital Technology and Health Care Should Help Long-term Growth**

We think these digitally enabled products will become commonplace as these devices take existing medical technology and combine it with Internet technology to make the resulting product even more effective.

While we might not see these technologies in our doctors' offices in the next year or two, we do see them adding to the long-term growth prospects of health care companies over time. Therefore we continue to believe that health care is an integral part of a diversified portfolio. We recommend that health care stocks comprise 15% of the equity portion of the portfolio and technology stocks comprise 19%. Additionally we suggest clients explore our Buy-rated names within these sectors—all of which are exploring the potential of digital technology.

**Who Benefits and Why?**

We think nearly every large diversified health care company should benefit from the use of data and the Internet. However we believe that some may benefit sooner than others. Medical device companies may benefit first as they can take existing medical device technology and develop digital ways to get a patient's health status quickly and reliably to caregivers. For instance, IBM is working with its partners, such as Medtronic and Johnson & Johnson, to use data from their products and services to help doctors and caregivers manage patients better. Abbott Labs is using an implantable heart device to allow doctors to monitor heart-failure patients remotely to help keep those patients from going back to the hospital.

Longer-term, we see biopharmaceutical companies such as Pfizer, Merck and others benefiting by developing more targeted drugs based on the genetic data on thousands of individuals with a particular condition. As a result, doctors could have a better understanding of which drugs will work best for certain types of patients. We also think this will help patients make more informed health decisions based upon their own genetic makeup.

**Existing and Potential Products That Use the Internet or Data**

Table 1 on the next page is a list of products that are available today, or are in development, that use data and/or the Internet. This list is for illustrative purposes only. Some of these products may never go beyond the research and development stage, while others may or may not become large, visible products. However, we continue to believe the Internet and data will be growth drivers for health care companies for years to come.
Valuation

We use various valuation methods including price-to-earnings ratios (P/E), dividend yields, discounted cash flow estimates, and others.

Risks

- Due to the highly regulated nature of health care, political and regulatory risk is always present.
- The hit-or-miss nature of research and development creates the risk that a significant amount of money could be invested in a product that fails to reach the market.
- Unexpected product failures or side effects could impact health care companies.
- Economic weakness could lead to a reduction or delay in IT spending.
- A strengthening U.S. dollar could make technology exports less attractive.
- Intense competition and pricing pressure could negatively impact both IT and health care companies.

For stocks recommended in this report, please see the individual company research opinions for specific company information, including valuation and risks.

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