

Disruptive Technologies

Innovations with revolutionary potential

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UBS Open End Index Certificate on the Alpha 8 Global Disruptive Technology Index

I. What is a disruptive technology and what is the potential behind it?

A disruptive technology means an innovation, which has itself or together with other developments the potential to partly suppress or completely replace an existing technology, product or service in the near future.

The principle goes back to Clayton M. Christensen from Harvard Business School. In his book, published in 1995, and in the article "Disruptive Technologies: Catching the Wave", he describes the idea and the chances of these technologies succeeding.

In a study published in May 2013 ("Disruptive technologies: Advances that will transform life, business, and the global economy"), the McKinsey Global Institute predicted that, together, applications of the 12 technologies discussed in the study could have a potential economic impact between \$14 trillion and \$33 trillion a year in 2025.

II. What is an example for a disruptive technology?

While the invention of the MP3-format in the mid-1990s itself was not resulting in a disruption, the further development of digital media and the dissemination of mobile playing devices in the context of functionality and usability initiated the following breakthrough to the practice standard. As a result the demand for compact discs (CDs) has decreased significantly in recent years.

III. Which sectors have the potential to develop a disruptive technology?

The index provider Alpha 8 Partners has identified the following ten sectors, which have the potential to develop a disruptive technology in the future: Robotics and Automation, 3D Printing, Cybersecurity, Material Science & Battery Technology, Cloud Computing, Supercomputing & Big Data, Social Networking & Advanced Mobile Computing Technology, Advanced Biotech and Genomics, Advanced Water and Waste Solutions, Solar Energy and LED & Next Generation Light Technology.

These sectors are presented in the following



Product Type Open End Index Certificate

Currency: WKN / ISIN UBS1RU / DE000UBS1RU1 EUR: USD: UBS2RU / DE000UBS2RU9

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Sector weighting in the Alpha 8 Global Disruptive Technology Index



3D Printing

- Advanced Biotech and Genomics
- Advanced Water and Waste
- Solutions Cloud Computing, Supercomputing, & Big Data Cybersecurity
- LED & Next Generation Light
- Technology Material Science & Battery Technology Robotics & Automation
- Social Networking & Advanced Mobile Computing Technology Solar Energy

Alpha 8 Limited, Solactive AG Source: as of 23.11.2015 Note:

Investor profile

A solution for investors with semi to increased risk tolerance, who would like to profit with relatively little capital expenditure and administration effort from the performance of all shares included in the index.

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Robotics und Automation

Robotics and Automation firms are specialized in manufacturing robots and developing processes that reduce or eliminate the need for human intervention. The results of the use of these technologies are increased safety and improved efficiency. Today's generations of robots are equipped with modern technologies such as artificial intelligence, multi-dimensional dexterity and advanced control opportunities, which allow them to handle even the most complex tasks. Nowadays, robotic technologies are already an integral part of nearly all modern industrial processes.

3D Printing

The technology of 3D printing allows companies to optimize the entire production process. 3D printers usually produce the work pieces out of powdery materials using physical or chemical curing and melting processes. 3D printers are able to produce almost all 3-dimensional forms and complex products, without the need of constructing a mold or purchasing an additional machine. Presently many 3D printing devices are leveraged by automotive, surgical, medical device, aerospace, decorative art, and consumer electronics firms.

Cybersecurity

Cyber-attacks are one of the greatest threats to the national security and cost the society billions every year, so the view of the US Department of Defense. Companies in the sector of Cybersecurity provide their clients protection for their electronic equipment against all different types of threats (viruses, malware, Trojan horses etc.) from hackers or terrorists. In addition to security measures to protect the computer devices, firms also develop alternative detection systems and encryption technologies. In the context of the growing threat, Cybersecurity becomes one of the most important technology sectors in our time.

Material Science & Battery Technology

Material science is the study of matter and its properties and the discovery and production of new objects that were previously impossible to produce using techniques such as casting, rolling, welding, ion implantation, crystal growth, thin-film deposition or sintering. Polymorphism, for example, is the ability of a solid material to simultaneously exist in more than one form or crystal structure. This gives rise to products, which are capable of self-healing or self-cleaning. Such products play an important role in different parts of industry like forensic engineering, renewable energies or nanotechnology research. Battery technology focuses on the development of longer lasting and faster recharging batteries.

Cloud Computing, Supercomputing & Big Data

Generally, Cloud Computing is the delivery of various computer software, applications, or services over the web with no or minimal programming required by the user. Normally, Cloud Computing means the saving of pictures, videos, music or books on a virtual storage medium, but also pay-per-use services and search engines are combined under this topic. Supercomputing and Big Data is the storage, retrieval, and management of extremely large amounts of information. As of 2013, the world's fastest supercomputer, China's Tianhe-2, could process data at speeds up to as much as 34 petaflops, so 34 quadrillion operations per second. To put this number in perspective, the average single computer performs around 100 million operations/ second.

Social Networking & Advanced Mobile Computing

Social networks as web-based platforms allow their users to share ideas, pictures, messages and activities globally with other persons. These networks could be personal (Facebook) or professional (LinkedIn). The developing of the mobile technology and the use of tablets, smart phones and other wearable devices gives the users the opportunity to use the web from anywhere at any time and to make the communication between people and their own information procurement more efficient.

Advanced Biotechnology and Genomics

Biotechnology combines technical items with living organisms to create new products. Today's advances in biotechnology include products and technologies to reduce pollution, feed the hungry, use clean energy, optimize industrial processes and fight against rare diseases. The Genomic as part of the biotechnology focuses on analysing the genomes of people to discover alternative treatment methods for diseases as cancer or diabetes, tailored to the patient's particular genomic makeup.

Advanced Water and Waste Solutions

According to estimates by the United Nations, in 2030 more than 8.5 billion people will live on earth. In this context, the water technology has the aim to develop and use new technologies to improve the sustainability and the availability of water and water resources. The solutions focus not only on purifying water for drinking, but recycling water to make it safe for cleaning or cooking and reducing the waste. Advanced waste solutions are environmentally friendly, more efficient means of treating various forms of liquid, solid, and hazardous waste such as anaerobic digestion, gasification, fuel cells, autoclave, and pyrolysis.

Solar Energy

Solar energy is the harnessing of energy produced by the sun to generate power. In principle, the solar technology is divided into active and passive techniques, depending on the using of additional equipment such as photovoltaic panels or solar thermal collectors. Most solar cells are based on crystalline silicon (c-Si) because of its stability and reliability. However, the ability to absorb light is limited, so new solutions are being researched. Solar technology is one of the most important pioneer technologies in the renewable energy sector and has the potential to reduce the dependence on fossil fuels and other natural resources.

LED & Next Generation Light Technology

LEDs (Light Emitting Diodes) produce a bright spectrum of colours while using a minimal amount of electricity. LEDs are capable of outlasting traditional light bulbs by a factor of 1000 and do not reach the extremely high temperatures. LEDs are most common in flat screen TVs, however, they also becoming more prevalent in street lights, headlights on cars and lights for home use. The market for LEDs is expected to grow to 42 \$ billion by 2019 from 13 \$ billion today. Next generations of light technologies mainly focus on energy saving and maximizing the features.

IV. Product solution

The Open End Index Certificate on the Alpha 8 Global Disruptive Technology Index tracks the performance of the underlying index, which reinvests net dividends of the index members. A management fee of 1.20% p.a. applies.

	EUR-Tranche	USD-Tranche
Underlying	Alpha 8 Global Disruptive Technology Index	Alpha 8 Global Disruptive Technology Index
Product Type	Open End Index Certificate	Open End Index Certificate
Issuer (Rating)	UBS AG, London Branch (A2 / A / A)	UBS AG, London Branch (A2 / A / A)
Lead Manager	UBS Limited	UBS Limited
Issue Price	EUR 100.00 per Certificate	USD 100.00 per Certificate
Launch Date	23 November 2015	23 November 2015
Management Fee	1.20% p.a.	1.20% p.a.
Recur. Retrocession for distribution partners	up to 0.50% p.a. (included in the Management Fee)	up to 0.50% p.a. (included in the Management Fee)
Listing / Trading	OTC, Frankfurt Exchange, Stuttgart Exchange	Frankfurt Exchange
WKN / ISIN	UBS1RU / DE000UBS1RU1	UBS2RU / DE000UBS2RU9

V. Smart index concept

The Alpha 8 Global Disruptive Technology Index is managed by Alpha 8 Limited and calculated by Solactive AG. The Index started on 11 November, 2014 and reflects the performance of companies in the ten identified sectors, which are potential fields of development for disruptive technologies.

The stock universe is built by all companies which are listed on a stock exchange that grants foreign investors access to trade without restrictions. Every potential index member should already generate at least 50 percent of its turnover in one of the ten relevant sectors. In addition, the market capitalization of each index member has to be at least 500 million U.S. dollar, and the average daily trading volume over the past three months has to be at least 500.000 U.S. dollar. Index adjustments are regular on a quarterly basis. In addition, the index committee can increase or decrease the amount of sectors to react as soon as possible on the dynamic in the development. After every index adjustment each sector and each component within a sector are weighted equally.



With start of the public offer of the certificate as of 23 November 2015 in total 98 stocks are included in the index. The current index composition can be found on <u>www.keyinvest.de</u> or <u>www.solactive.com</u>.

VI. Chances

- Share-based participation in the growth potential of innovative technology companies, which have the potential to partly
 suppress or completely replace an existing technology, product or service in the near future
- Diversified investment in innovative technology companies in currently ten sectors with a total of 98 stocks
- Periodically index rebalancing and if required index adjustment to consider the current market trends
- Generally tradable on each trading day under normal trading conditions.
- No fixed maturity.

VII. Risks

- No capital protection: the investor bears the risk of losses if the price of the index declines. The included technology companies are part of relatively young commercial sectors, of which is not yet certain if they will fulfil the set hopes and which companies will actually establish itself.
- The investor is exposed to the credit / insolvency risk of the respective issuer and can therefore lose the investment in case of an issuer default / insolvency (detailed information on the issuer is provided in the Securities Prospectus, which is available free of charge from the issuer or another notified body).
- The issuer intends to provide (off-exchange) liquidity on every exchange trading day during normal market trading hours. Investors should, however, be aware that selling the certificate may not be possible at all times.
- Since index constituents are denominated in different currencies and the certificates provides no currency protection, the investor is exposed to additional Euro or U.S. Dollar currency fluctuation risks, which can have a negative impact on the performance of the certificates.
- The issuer has an early redemption right under certain conditions. Further information is provided in the Securities Prospectus.

Information about yield disclosures

Actual costs such as fees, commissions and other charges, which are not imposed by the issuer or the lead manager, are excluded here and negatively affect returns. Example: For an investment of e.g. 1,000 EUR, assumed total cost of 1.2% have to be taken into account (safekeeping and administration, e.g. 0.2%, incl. VAT, as well as one-time transaction charges, e.g. 1.0%, for purchase or sale). The gross performance of the investment is reduced through these charges by the exemplarily assumed rates at the exemplarily presumed time to maturity and/or holding period of the product. With a lifespan and/or holding period of 1 year, the gross performance is reduced by 1.2% p.a., with a lifespan and/or holding period of 5 years, by 0.24% p.a. The actual time to maturity and/or holding on the product and/or the investor's in-vestment horizon.

The actual, generally valid or individually agreed charges are given by the price and service list, or respectively the individual terms, of your bank(s) and/or broker(s) and alter the exemplarily given effect. Please consult with your bank/broker prior to your purchase regarding the actual costs and charges.

Additional information

- Respective Termsheet
- Respective Final Terms
- Respective Base Prospectus (together with any addendums and the Final Terms: the "Securities Prospectus")

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