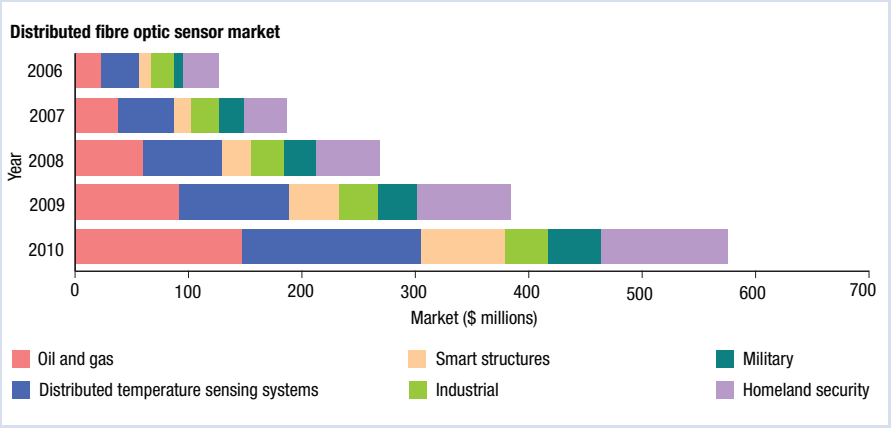
Legislation and standards needed to drive market growth

The outlook for the fibre-sensor sector is growth towards the billion dollar level, according to the latest set of figures from two organizations. The Optoelectronics Industry Development Association (OIDA) estimates the market for distributed-fibre-sensor systems will reach $550 million by 2010. These are similar figures to those estimated by Global Industry Analysts, which projects that the fibre-optic-sensor market will be worth more than $650 million by 2010.

The two organizations also agree on the main drivers for growth — homeland security and defence. "Many vital assets, which may extend over wide areas, are under constant threat of being attacked or breached," says David Krohn of Light Wave Ventures, who carried out the market research for the OIDA. "Fibre-optic-sensor technology has the potential for wide usage in this application, but it must be capable of being integrated with other surveillance approaches, such as wireless technology."

The OIDA's findings also show that another key market driver is the oil and gas industry. "With the current price of oil up over 300% in the last five years and a limited supply, smart oil and gas wells, as well as reservoir management, are very important," says Krohn. "The industry has seen some major investment in optical-fibre-sensor technology recently because no other technology can do what fibre sensors can do in this application."



OIDA

But although Krohn's research has shown that fibre sensors have great potential in these and many other applications, he warns that industry coordination in the development of standards is required to promote market acceptance and growth. "When businesses are heavily customized, they will remain small," says Krohn. "When an industry is standardized, it is able to grow."

In Krohn's opinion a lack of legislation for the monitoring of infrastructure, such as power lines and bridges, has also contributed to slow growth. "I would like to see legislation that ensures all bridges and other important pieces of infrastructure are 'smart'," says Krohn. "A distributed sensing system for a bridge can cost between $50,000 and $300,000, which most construction companies do not want to spend, but replacing a collapsed bridge can cost more than $1 billion. Legislation would encourage the construction industry to invest in a technology, which in the end could save it a lot of money."

As well as standards and legislation, Krohn believes cost is one of the biggest barriers to growth in the sensor industry. "Fibre-sensor systems are still relatively expensive because many companies have developed proprietary technology and systems are heavily customized," says Krohn. He feels standardization will help bring costs down.

Joint venture targets temperature monitoring of power cables

UK company Sensornet and Chinese company Bandweaver have formed a joint venture to supply the global power market with monitoring solutions based on optical-fibre sensors. Sensornet is a supplier of power-cable monitoring solutions based on distributed temperature sensing (DTS) and the joint venture will focus exclusively on providing monitoring solutions for the power utility sector.

This announcement follows a series of big deals for Sensornet, which recently received a multimillion-dollar contract for its DTS system to be used in an offshore oil field and also a deal with a major Asian utility company for monitoring a transmission network.

Sensornet says that its Sentinel DTS-XR system measures temperature with high resolution at distances of up to 30 km. It enables utility companies to detect potential hotspots in cables and take preventative action before temperatures approach the official ratings.

FISO gets nuclear order

FISO Technologies has been awarded an order of over $300,000 for optical sensors and signal conditioners from a major UK producer of electricity. The products will be used to monitor nuclear power plants. The order, which represents 20 signal conditioners and more than 70 sensors, is to be delivered over a three-month period with an anticipation of future orders from this well-established customer, who has acquired several FISO systems in recent years.

The fibre-optic displacement sensors are installed in nuclear power plants to monitor the dilation of concrete structures surrounding nuclear reactors. The linear displacement sensor, which covers a range of 20 mm, and the universal multichannel instrument system, which has a sampling rate of 20 Hz, have been used in this application for more than five years.

SensorTran receives funding

SensorTran, a developer of distributed-temperature-sensing technology, has raised $8 million in its latest round of venture capital financing. The round was co-led by new investor Advantage Capital Partners and prior investor Expansion Capital Partners, with all existing investors participating, including WHEB Ventures and Stonehenge Capital Company.

SensorTran's distributed-temperature-sensing systems are used in several applications, including monitoring transmission and distribution power cables, downhole oil and gas wells, high-temperature vessels, pipelines, storage tanks and climate change.

Kent Kalar, CEO of SensorTran, said, "The past year was SensorTran's strongest to date, and this additional capital will empower us to continue expanding our product portfolio, our sales reach, and our global service network."