

Secrets to Success

How Businesses Balance R&D Spending against ROI

Save or spend? Solution providers have to decide how much to invest in technical development, without going into debt. A&S finds out how manufacturers maintain an edge in innovation while ensuring the ROI is right.

BY LING-MEI WONG

Product development is universally a top budget priority. While budget items such as ad spending can be cut, R&D remains untouchable.

However, hiring a team of geniuses does not come cheap. While talent should be rewarded, R&D investments take time to recoup. Some companies may focus on their most profitable solution and dedicate R&D resources toward increasing that revenue, rather than developing truly innovative products.

Making an honest buck out of a good idea is far from a crime. However, when a company depends on a flagship product that is essentially unchanged, it risks becoming obsolete. In challenging financial circumstances, the cost of development may be trumped by the need to generate ROI fast.

Security has been no exception to the global downturn. "There is a lack of innovation in biometrics," said Ken Nosker, President of Fulcrum Biometrics. "All the copycat, me-too companies jumped in overnight and they haven't innovated anything. They got together smart technical people and copied products."

Trade shows have trumpeted scores of new products. However, many brands introduced no-frills lineups for

buyers on a budget. "While Sony continues to provide the most innovative and high-end models, we also provide entry-level and cost-friendly models to meet the needs of different customers and applications," said Yoshikazu Hirano, GM of Security Solutions, Business and Professional Products for APAC, Sony Electronics.

Disruptive solutions are few and far between. "My perception is that there is a reduction in the number of genuinely 'new' product launches," said Philip Avery, cofounder and MD of Navtech Radar. "What we tend to see is mostly in the software arena, which is probably to be expected, as the security and surveillance industry continues to push towards IP."

In a sense, product innovation is leaning toward refinement and not so much grinding to a halt. "Products are more shaped and tuned," said Johannes Rietschel, founder and CEO of Barix. "We often use the phrase 'evolution instead of revolution.'"

From a component perspective, Texas Instruments witnessed no slackening in R&D. "I don't see a slowdown in product launches and innovation in video surveillance," said Cyril Clocher, Business



▲ Ken Nosker, President of Fulcrum Biometrics



▲ Yoshikazu Hirano, GM of Security Solutions, Business and Professional Products for APAC, Sony Electronics



▲ Philip Avery, cofounder and MD of Navtech Radar



▲ Johannes Rietschel, founder and CEO of Barix



▲ Cyril Clocher, Business Manager for Video Surveillance, Texas Instruments

Manager for Video Surveillance, Texas Instruments. "Customers cannot launch or innovate if they don't have components for products."

Lens suppliers reported an uptick in network and megapixel camera launches. "It seems that many new camera manufacturers who do not have established brand names are jumping into the fray, along with large incumbents who are updating their somewhat aging product portfolios with new models and competing with the pure-play network and megapixel camera companies," said Andrea Iñiguez, VP of Business Development, Theia Technologies.

A successful company should have innovation at the heart of its business. "It should be a natural result of ambition to come up with new products that are exciting to both customers and your own people," said Maarten Mijwaart, GM of Automatic Vehicle Identification, Nedap. "As soon as you start talking a lot about topics such as 'innovation management,' you can be pretty sure innovation is not a natural aspect of your company culture."

SPENDING PRIORITIES

Balance seems to be the operative word for weighing R&D spending against generating a profit. "We are careful to balance cash flow and revenue, while making sure we can support R&D and engineering and customer support," said Dick Salzman, VP of Marketing for Keeneo. "ROI for R&D is always weighed as to short- and long-term ability to turn R&D into sellable products and features."

Several considerations are taken into account for budget decisions. "Barix dynamically controls spending depending on quarterly developments," Rietschel said.

Market trends are also noted at trade shows for product developments. However, customer input is key for Barix. "When we see that interest for a certain



▲ Security solution providers determine R&D spending based on sales, application trends and customer input.

area, product or feature pops up in our inquiries, we take a closer look and consider pushing funds into that direction," Rietschel said.

In response to customer demand, Fulcrum Biometrics developed a fingerprint scanner that operates as an accessory to smart phones and tablets. "Our concept is based on our channels and what they want," Nosker said. "We have a very sustainable business model and R&D expenses will never get so big that a less-than-successful product launch will put the company at serious risk. My bottom line is sustainability."

While some companies are able to raise venture capital, not all manufacturers can depend on investors to fund R&D. Some corporations can afford to acquire start-ups to fill portfolio gaps, but ROI is not instant.

For Arecont Vision, it measures ROI related to R&D in terms of its ability to develop solutions that meet and exceed market demands in a timely manner, said Becky Zhou, Sales Director for APAC.

Israeli alarm vendor Visonic boosted its R&D investment. "We took advantage of the slowdown in the market activity to enhance and accelerate the



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▲ Becky Zhou, Sales Director for APAC, Arecont Vision



▲ Amir Gefen, VP of R&D for Visonic

introduction of new technologies and innovative solutions,” said Amir Gefen, VP of R&D for Visonic.

CATERING TO MANUFACTURER NEEDS

Component suppliers measure ROI by different benchmarks. “When I see a customer with a leading product designed with TI components, this is what I see as ROI,” Clocher said. “We are integrating and innovating on the silicon, or the IC itself, so that affects the trends of the market and brings innovation to customers. This is where we put our investment to provide the end user with a platform that makes them competitive and differentiated on the market.”

The component perspective certainly requires the latest R&D, but that innovation translates into how other people interpret it. “As a technology company, we don’t have a product road map,” said Alessandro Gasparini, Senior Sales and Marketing VP and Chief Commercial Officer of ImmerVision.

The company licenses a 360-degree panomorph lens technology and dewarping software, but the lenses themselves are ground by third-party lens suppliers such as Fujinon, Gasparini said.

R&D TARGETS

Once R&D funds have been allocated, the next step is to determine where the money goes. While funds may go toward a completely new product line, integration with third-party vendors also requires R&D resources. If a company slows product launches, its R&D team may be working on smoother integration.

For Visonic, its R&D projects involve integration of its solutions with central monitoring station platforms, wireless home automation solutions and home security products by other manufacturers, Gefen said.

Israeli video synopsis pioneer BriefCam divides its R&D team into two. One responds to issues in the field,

such as integrating with VMS platforms or different languages, while the other team develops ideas around its technology. “Our customers don’t necessarily ask for them; we come up with new ideas we try to understand the directions in which the technology may develop,” said Dror Irani, CEO of BriefCam.

March Networks has a similar R&D structure. Its core team works on sustaining existing solutions, while the innovation team works on future technology. “R&D is protecting the existing customers in terms of what they are using,” said Fabrizio Colciago, CTO of March Networks. “We want to give them some kind of continuity. At the same time, we want to provide them the next step to go to the next level.”

ENGINEERING INTEROPERABILITY

Integration with third-party components and solutions can be difficult. “Even with ‘standards’ there is a difference of the way it actually works as opposed to the way it is written it should work — just ask Microsoft,” Salzman said.

Ideally, companies should disclose interfaces and provide “how to” information for product use to third parties, without many hurdles. “It depends on the intentions of the other parties, if they are using the open standards as a marketing tool or if they really want to cooperate and integrate,” Rietschel said.

Clear documentation helps smooth integration between hardware and software. “MegaLab was developed to make it easy for platform designers to test and modify their software and hardware for use with Arecont Vision cameras,” Zhou said.

ImmerVision ensures its lenses will work with different products through a compliance check. “Manufacturers submit their product for testing, then the certification is signed by our chief engineer stating



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▲ Fabrizio Colciago, CTO of March Networks



▲ Konrad Hechtbauer, Director of Project and Application Development at Dallmeier electronic



▲ János Kópházi, MD of Intellio

product XYZ is ImmerVision-enabled,” Gasparini said. “This is the case for lenses, software and products.”

STREAMLINING PRODUCTION

While some companies did not reduce R&D funding, they made moves to make production more efficient. This includes greater factory automation as well as relocating production facilities to other countries. However, nearly all hardware companies interviewed felt there was no place like home. Outsourced labor may be cheaper, but domestic production enables tighter control over product development.

While Dallmeier visited many international production facilities, it chose to keep manufacturing base in Germany. “Dallmeier is the only manufacturer in Germany that develops and manufactures all components on its own,” said Konrad Hechtbauer, Director of Project and Application Development at Dallmeier electronic.

Companies with overseas production select partners carefully. Theia’s lenses are made by a partner with plants in Japan as well as Indonesia, Iñiguez said.

March Networks manufactures hardware in Mexico and Asia, but software is developed in-house. “Our central R&D location is in Canada, with 80 percent of it in Ottawa, or more than 100 people,” Colciago said.

Barix moved production to China 10 years ago. “We are considering opening a second production location outside of China for various reasons now,” Rietschel said. Its R&D is based in Switzerland and Germany.

FUTURE TRENDS

The future direction of R&D is in line with current product development. IP is a continued migration, with the cloud and greater connectivity being essential. Component-level breakthroughs will enable faster processing on the edge, reducing network loading. As hardware becomes harder to differentiate on, software will be the benchmark of a company’s innovation.

“We don’t expect any revolutionary new technologies, but rather a honing and smoothening of the current systems, with IP moving even further into lower-price systems,” Rietschel said.

Technology will be amalgamated to make sense in other environments. “The cloud is coming in quick and having a big impact,” Irani said. Video monitoring could check on a loved one in the hospital — from the office, at home or on the road via mobile devices.



▲ Remote monitoring will be a key development area for security, as more providers look into Web-based solutions and mobile applications.

SMARTER, FASTER, GREENER

Some companies worked to make power-hungry products more efficient. This is a challenge with processing-intensive devices, such as megapixel cameras or network recording devices. “While other companies were talking about the economic crisis, Dallmeier used this period to prepare the company for the time after the crisis,” Hechtbauer said.

Other companies worked on making their solutions smarter. Hungarian analytics provider Intellio developed intelligent edge cameras and vertical-specific software that are easy to manage. “The new Intellio camera models are able to handle several specific applications, which normally run on a server,” said János Kópházi, MD of Intellio.

The mobile revolution will require additional R&D resources. “It’s the next three to four years for the output, but you have to be doing the R&D today to have the products positioned in the market tomorrow,” Nosker said.

As copycat products increase, differentiation lies more in applications than hardware. “What we see happening is that hardware is becoming more of a commodity every day,” Mijwaart said. “The true innovation and one of the only opportunities left to be distinctive is by having better understanding of client needs in specific applications and offer firmware and software that will fully support those needs.”

Ultimately, technology serves as tool to advance human goals. “Today, the differentiation is not in performance any more but in the solution,” Colciago said. “It should not be humans adapting to the technology. We should use technology to understand what the human wants. Because at the end, the human is the master and the technology answers to us.”

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