IP in the development of multimedia products

The IP industry will be instrumental in delivering many of the latest innovations, coolest features and most inspiring apps

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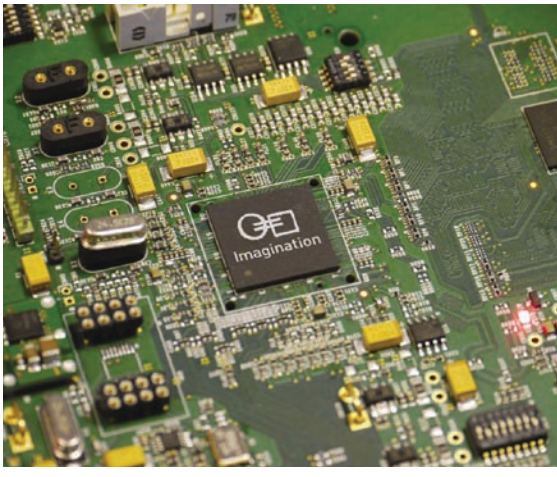
With each new generation of multimedia product, users expect better implementation of popular features, lower power consumption, and lower cost, while having an insatiable appetite for new features and capabilities too. The demand for products to constantly improve in all these areas creates the demand for ever more advanced and efficient technologies.

At the heart of many of today's most significant and iconic consumer multimedia products are key technologies, developed by a relatively small yet highly influential industry that focuses on the creation of advanced semiconductor designs that it then licenses — the intellectual property (IP) core vendors.

This design IP industry has few household names — but it was worth $1.34 billion in 2009 according to Gartner. The IP industry has been instrumental in delivering many of the latest innovations, coolest features and most inspiring apps – and should continue to be for many years to come, as the strategic reasons for using IP rather than "home grown" technologies intensify.

The increasing convergence of multimedia product categories is relentless — the transformation of the TV is but the latest example and the emergence of the smart phone an industry phenomenon. Integration of all the key multimedia functions in silicon has led traditional semiconductor companies to buy-in best-of-breed multimedia technologies to ensure their solutions are competitive.

Say you're one of the big semiconductor brands. Maybe in the old world order you created most of your core video, audio, and even graphics technology in house, and made the silicon yourself. You had to decide several years ahead what technology baskets you were going to put your eggs in. If your choice was more at the HD-DVD end of the spectrum than the Blu-ray one? Well, you'd find it very hard to let go, since you had so much more invested. And even worse: what if the technology choices you made back then weren't in step with what your customers, the big consumer electronics brands, want now? In both scenarios, the answer to your problem is IP.



IP today

The way things are now semiconductor companies have choice: you're starting your next product development cycle, so you start to look around. Which multimedia technologies are looking promising? Are there new open standards coming into play? You don't need to develop the technology yourself so you can choose which to support much later in the game. Someone else is taking the risk for you: an IP provider. You can license an IP core and have chips in the market in as little as a year and seldom more than 24 months.

And because there are several IP companies in the sector you're targeting you've got a choice of IPs that may support different standards, offer different architectures, or deliver performance advantages. And of course some vendors will be better to work with than others, affecting the total cost of ownership. Whichever: risk will be lower because it wasn't your risk as a semiconductor or CE company — it was the IP company's.

The IP business model is based on the licensing of specific technologies, usually in the form of hardware and software chip subsystems, with upfront license fees paid first, plus royalties when silicon devices that use the IP are shipped. One advantage of this royalty model is that licensees only pay for devices they ship, effectively reducing the overall cost if the product does not ship in volume. The other is that, since the IP company makes most of its revenue from the royalty it has a strong vested interest in doing everything possible to make its customer a success.

Of course, the semiconductor and manufacturing companies still provide tremendous value into the process. Making a chip isn't like completing a jigsaw — take the right IP cores, bolt together, sell. There's still a lot of work to be done before the finished product rolls out. And in few markets is this truer than multimedia, where there are issues such as keeping everything working when manoeuvring multiple massive HD video data streams, while maintaining broadcast quality at all times without fail.

Some of the best known multime-

dia brands are now starting to engage more directly with the IP industry — either to take control of the design of the silicon used in their products, or simply to get to know the IP they use very deeply, and from that basis deliver superior results compared to competitors.

The role of IP in defining key features of leading CE products is significant. Imagination's IP for example is used in TVs from a top five brand; smart phones from all of the top five brands; DAB digital radios from the top three brands; numerous in-car, set-top box, and computing products; two of the leading brands for netbooks; and leading brands for tablets and media players.

Because those CE companies create innovative products that meet and exceed users' needs and desires they are bought by millions of consumers. Imagination's IP, for example, is in well over 300 current products with over 350 million devices shipped — and will exceed half a billion units within the next year.

IP innovation

Success in the IP business is not just about the ability to deliver proven and well-supported IP today. It is fundamentally driven by the capability to create a roadmap of future technologies which accurately anticipates the requirements of tomorrow's consumers.

Increasingly CE devices have to deliver the Internet, PC capabilities, TV, music, navigation and more in one platform. We think of it as four screens — TV, PC, mobile, and in-car — each increasingly capable of being connected to the cloud.

By delivering the broadest range of proven, intellectual property (IP) cores, each of them outstanding in its abilities to accelerate a wide range of industry standards at the lowest power and smallest silicon area, IP technologies have won a place in some of the world's best selling and most iconic consumer electronics products. As multimedia products become ever more standards rich and varied in the convergence of features, the role for IP, with its flexibility, low risk, and efficient cost, is likely to become more and more ingrained.