

From Makerspace to Marketplace: Unlimited Possibilities to Change the World

For decades, innovative new products have been almost entirely imagined, designed, and developed by trained engineers, and then brought to market by large, well-funded corporations. But the world is changing.

Many of today's most extraordinary breakthroughs are being developed by individual Makers— inventors and dreamers; fashion designers and musicians; physicians, athletes, teachers, and even children. Makers are individuals from almost any background who but use today's new collaborative tools and knowledge to create new products. One example is fourteen-year-old Quin Etnyre, a Maker who already owns his own Kickstarter-funded business. ALS patient Patrick Joyce and his 2015 winning Hackaday team are Makers who created an eye-controlled wheelchair system that offers life-changing mobility and independence for those without the use of their hands. Other Makers are the team of graduate students who expanded the open source concept to bionics, giving amputees access to affordable, customizable, 3D-printed prosthetic hands. Yet another is the vineyard owner who took on the California drought with a sensor-driven water conservation system that saved 430,000 gallons of water in its first year.

These Makers—and thousands like them—now have nearly unlimited possibilities to make the world a better place. And in the process, they're contributing to the ever-growing Internet of Things (IoT). According to a recent Gartner prediction, 50 percent of IoT solutions by 2017 will originate in startups that are less than three years old, creating products we can't even conceive of today because they haven't been invented yet. This is the new Makerspace.

"Today, anyone can change the world using technology," says Sander Arts, Atmel senior marketing executive. "That presents tremendously exciting opportunities for us. We can help our customers make meaningful contributions using our technologies, and then help them bridge the chasm from Makerspace to marketplace."

This chasm from Makerspace to Marketplace can feel overwhelming. The process of taking a prototype from technical proof-of-concept through funding and production, and ultimately to capture the attention (and walletshare) of a critical mass of consumers and influencers has historically been difficult even for well-funded organizations. Luckily for today's Makers, Arts says the worlds of engineering and marketing are drawing closer, with powerful new technologies and global connections that are narrowing this chasm into a much more manageable span.

The Technology Threshold Has Dropped

"Makers are reaping the benefits of new development environments that have literally turned product design into child's play," Arts says. This is part of an evolution that Atmel has helped drive, although not originally for the Maker movement. In recent years, consumer demand pushed companies to develop increasingly feature-rich new products and bring them to market faster and at lower cost. In response,

silicon providers such as Atmel made significant investments into integrated hardware, reference applications and software libraries, and high-quality, production-ready development tools to help engineers meet these demands. Ultimately, open source hardware prototyping platforms appeared that allowed almost anyone to quickly create a proof-of-concept of a new high-tech product.

One example is Arduino, which is powered by an Atmel microcontroller and includes easy-to-use interfaces that even novices can use. Arduino has become a launchpad for many Maker projects. A search for 'Arduino' on Kickstarter or Indiegogo—the most popular crowdfunding platforms—identifies hundreds of projects. Many trending Kickstarter campaigns are powered by Atmel technology, and some of the most-funded campaigns started out using or currently feature Atmel technology—from 3D printers and drones to household humanoid robots and smart home solutions. The 2015 Hackaday prize challenged Makers to build something that matters in the world. The result? All of the prize-winning projects—and 80 percent of the finalist designs—were powered by Atmel-based Arduino boards.

Differentiation Is No Longer Just About the Chip

As product developers evolve from traditional engineers to Makers, Arts notes an interesting repercussion; a sort of commoditization of technology building blocks. In the past, engineers developed loyalties to particular controllers and their feature sets, and the industry sold chips based largely on 'feeds and speeds.' But this approach to microcontroller positioning has limited appeal to Makers, whose focus is on how to bring their products to market. In Arts' opinion, silicon vendors who support the Maker movement need to differentiate themselves in areas such as integrated hardware that provides the extensive peripheral features these innovative products need, as well as rich software libraries and reference applications that help Makers take advantage of the full range of the chip's capabilities.

Silicon vendors also need to provide development platforms that do more than help Makers prototype. "On top of developing superior technology, Atmel recognized the need to not only make design easier, but also to make the transition from prototype to production easier," says Arts. "The Arduino environment is intuitive and easy to use for prototyping, but it has limitations that make it unsuitable for taking a project all the way to production. We provide free software development tools that let Makers import an Arduino project directly into our Studio debugging environment, which natively supports Arduino libraries. And we offer a full suite of microcontrollers at varying cost and performance levels, as well as components for connectivity, security, and touch interfaces, to take prototypes to final products. That kind of ecosystem compatibility isn't available anywhere else."

Buyers and Influencers Are a Click Away

While Arduino simplifies design, crowdfunding sites such as Kickstarter and Indiegogo simplify the process of bringing those concepts directly to the investors who will fund their development and to the consumers who will pay for the finished product. Makers are reaching out to their community for feedback as they perfect their creations—sharing their projects across outlets such as Hackaday and Instructables, which are now being picked up frequently by mainstream media including Mashable, TechCrunch, CNET, and others. But as Makerspace becomes more crowded, it is becoming more challenging for individual Makers to garner attention and differentiate their products from the slew of

innovation on these sites. It is also impacting how semiconductor companies need to differentiate themselves.

Chip manufacturers can be valued partners who help Makers connect with partners, influencers, and buyers quickly and effectively. “The dynamics are changing so dramatically that companies like Atmel are taking a completely different approach to helping our customers succeed. In many ways we’re becoming a media company that sells semiconductors. If I can help customers sell their products by the power of my community, we all win,” states Arts.

Anticipating this need, Arts and his team have developed a broad support network, including significant investments in Maker Faires around the world and tech tours that bring training and supply chain assistance to local Makers. Atmel’s AVR Man, a superhero spokesman who makes technology fun and accessible, is a recognized presence at these events. Atmel’s activities are part of the noticeable shift not only from Makerspace to marketplace, but also in major brands already in the marketplace who are tapping back into the Makerspace community. Other examples include the extensive IoT activities of global consulting and services firm Accenture and the recent acquisition of desktop 3D printer company MakerBot by industrial leader Stratasys. Makers are making the corporate world sit up and take notice.

Spreading the Word as Makers Change the World

This is an exciting evolution, and Atmel works hard to support it using its extensive social networking influence. Atmel is ranked as the number one social semiconductor company by Publitek (September, 2014), with a social media influence that is the highest in the industry. The [Atmel blog](#) has millions of views and shares—more than all other 39 semiconductor companies combined (Publitek research, 2015)—while its Facebook, LinkedIn, Google+, and YouTube pages add millions more impressions. The company has 55,000+ Twitter followers today, and that number is growing by 22 percent per quarter. These impressive numbers make a significant difference to Atmel’s customers and their ability to reach their prospective markets.

Atmel has close ties to many of this year’s top 100 IoT start-ups listed in a recent [Forbes article](#). Of these top IoT start-ups, modularity is king. A theme that dates back to the days of LEGO, K’Nex, and Tinker Toys has been adopted for products such as Google’s Project Ara and ‘build your own devices’ such as the BLOCKS smart watch. A number of DIY solutions have originated in the Maker community, including littleBits, Microduino, and Modulo. For littleBits—whose Arduino-based electronic kits have won more than 25 tech and education awards and who has been named a company to watch by numerous news organizations—getting the word out was key to selling its products in more than 100 countries around the world. The company says, “... Atmel and littleBits have developed an awesome relationship over Twitter. By helping us spread the word about all things littleBits, Atmel has brought in a swell of new followers and quality engagement. We’re happy that this content partnership has worked out and we look forward to continue building this relationship.”

Atmel’s strong social presence influenced other successful Makers, such as BeON, a home security start-up, who says, “Atmel did a superb job of supporting our Kickstarter campaign. We loved their blogs, posts, and comical, yet relevant memes in support of our product. In addition to our funding, one of the

primary purposes of the campaign was to get feedback on our brand identity. Atmel helped us do this by posting our value proposition in their own words, which helped us further refine our tone and positioning.”

PubNub, a well-funded startup that supports IoT applications and hardware, saw a substantial upswing in consumer awareness thanks to Atmel. “Ever since Atmel and Pubnub partnered and Atmel started writing about us, we’ve seen a 65.7% growth in readership which has been huge for our readership and blogs. We’ve also seen a 10% growth in our Twitter followers. Lastly, Atmel has made up for 15% of our total referral traffic.” And UnaliWear, which provides IoT safety support products for seniors, says, “Aside from just the development hurdles we were faced with, Atmel also helped us promote UnaliWear which helped us achieve our vital milestone on Kickstarter. This also provided market validation and consumer acceptance to our product.” Atmel has also noticed products that began with the Maker community that have transcended well beyond and are targeting a consumer market, such as Bare Conductive.

It’s this sort of validation that drives Arts and Atmel, powering an infectious enthusiasm for the new world order. “The ultimate power is with the Makers,” Arts says. “We truly believe that they are changing the world. And really, this is what technology has always been about. While Makers see a way they can make the world a better place, we have the amazing opportunity to provide technologies, connections, and a full range of support that lets us become a champion for people who are solving world problems. We say that we are ‘enabling unlimited possibilities,’ and we truly do that.”