# Collaborating With Customer Communities: Lessons From the Lego Group

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**BY YUN MI ANTORINI, ALBERT M. MUÑIZ, JR. AND TORMOD ASKILDSEN**

**? THE LEADING QUESTION**
How can companies collaborate effectively with their customers?

**FINDINGS**
▶ Companies need to open lines of communication through programs that users of the products see as valid.

▶ Collaboration with customers is most effective when companies provide several platforms for interaction.

▶ Since the company and users may have different interests, companies need to develop clear guidelines for considering user input.

CUSTOMER-ORIENTED COMPANIES pride themselves on their ability to understand the experiences and insights of the marketplace and then integrate the best ideas into future products.[1] But what would it be like if you found that you had hundreds if not thousands of knowledgeable users of your products ready and eager to spend nights and weekends acting as extensions of your research and development department? For the Lego Group, a maker of children's creative construction toys based in Billund, Denmark, this close bond with the user community — not just children but a large coterie of adults who have been using its products for years — is not a pipe dream but a reality.

Lego users have a long tradition of innovation and sharing their innovations with one another — activities that the Internet has made much easier. As Lego managers became more aware of innovations by the company's adult fans, the managers realized that at least some of the adult fans' ideas would be interesting to the company's core target market of children. In 2005, Lego created the Ambassador Program to provide a fast and direct way for the company and its fans to get into contact with one another. The program has provided considerable value to both sides.

• For the Lego Group, the program has offered exposure to new ideas, new technologies and new business partnerships. Management saw that not everything needed to be developed internally. Indeed, the company has found ways to expand into new market

Adult Lego users have pioneered many creative uses of Lego bricks. This sculpture, for example, was created by artist Nathan Sawaya.

areas without having to sustain long-term fixed costs.

• For the adult fans, collaborations have allowed them to influence Lego's business decisions and encourage the company to develop products targeting teens and adults. In some cases, Lego has decided to back businesses that produce products related to its own.

Through trial and error, Lego has developed a solid understanding of what it takes to build and maintain profitable and mutually beneficial collaborations with users. In what follows, we will examine the emergence of Lego's user communities, how management's involvement with user groups has evolved and the core principles that Lego has formulated for successful interaction with its user groups. (See "About the Research.")

## The Emergence of Lego User Communities

For decades, Lego's colorful plastic bricks were developed for and used by children who played alone or with a few playmates. As the children grew up, they generally outgrew their interest in Lego products. However, beginning in the late 1990s, two things happened: (1) the company introduced a series of new products that appealed to older users, such as Lego Star Wars and Lego Mindstorms; and (2) the Internet enabled people to connect in completely new ways, prompting many adults to return to Lego play and transforming their play experiences into a serious and demanding adult hobby. By 1999, there were 11 known Lego user groups, mainly located in North America. By 2006, the trend had expanded globally to include more than 60 groups. And by February 2012, there were more than 150 known user groups, with over 100,000 active adult fans worldwide.

In developing innovations, adult Lego users tap into a deep understanding and knowledge of the company's product line, its possibilities and its limitations. For example, they have developed completely new strategy games, new modular building standards and specialized software. These user-created innovations have expanded the Lego play experience and pushed the use of Lego materials into new and virtual media, enabling creative possibilities that weren't previously possible. The innovations have created value for the innovator and encouraged deeper community engagement[2] and community vitality.[3]

Consider, for example, a service innovation called Auczilla that was introduced in 1995. It enabled people (often adult fans) to buy specific (often huge) quantities of Lego pieces online. Auczilla's successor, BrickLink, which began in 2000, sells pieces through more than 5,800 online shops. The largest secondary marketplace for Lego sets and elements, it recently had about 200,000 registered members and offers more than 134 million Lego elements for sale.

Adult fans also pioneered more advanced ways of designing Lego models. An early example of this was LDraw, a freeware computer-aided design program released in 1995. The program allowed computer users to develop, test, render and document designs based on Lego parts before constructing the models and sharing the designs, much the way architects and industrial designers rely on CAD professionally. Although the developer, James Jessiman, died in 1997, LDraw's impact on the Lego community endures. Tools are available today for Windows, Macintosh and Linux operating systems. LDraw allows users to export and import Lego parts lists from their designs to online shops listed on the BrickLink site, enabling them to identify and order the exact elements they need to create their models.

Adult fans have also created hundreds of minor improvements that make the play experience more inspiring, fun and challenging for them and fellow users. For example, user innovations made it possible to customize Lego Minifigures, build themes that better mirror personal interests and combine Lego pieces in new ways to make unique expressions and functions.

Many of the fan innovations have improved and extended the Lego building system or introduced new ways to use it that dovetailed well with how Lego itself thought of its products. Over the years, adult fans have uploaded more than 300,000 of their own Lego creations on MOCpages.com (one of the many sites fans use for sharing their work) and posted more than 4.5 million photos, drawings and instructions online. In addition, fans have shared thousands of Lego-inspired movies on YouTube, with the top five movies attracting more than 64 million views. Cumulatively, the fan activity represents a vast library of free ideas available to anyone.

## How Lego's Relationship With User Groups Has Evolved

Historically, Lego was an extremely private company that tightly controlled its products and intellectual property. The company's public position was "We don't accept unsolicited ideas." However, things began to change in the late 1990s following the introduction of a new line of kits called Lego Mindstorms, which contained software and hardware to create small customizable and programmable robots. Sophisticated users found ways to hack into the code and adapt the new products; they talked about their innovations on independent websites. This presented Lego management with a choice: either pursue legal action against the hackers or invite users to collaborate on new products and applications. The company concluded that litigation would be difficult and costly — and also that there could be significant advantages to collaborating with users.

Among Lego employees, there was skepticism about how collaboration with adult users would actually work. After all, many of the adult users didn't know or care about designing products for the company's target market — children. To make things simple, the company put a small team of Lego employees in charge of reviewing fan input to make sure that it was properly aligned with the company's marketing goals. This internal "sign off" was in place for several years. Meanwhile, Lego experienced a turbulent period from 1998 to 2004 (unrelated to its involvement with the user community), characterized by escalating competitive pressures and financial losses.

The appointment of a new CEO, Jørgen Vig Knudstorp, in 2004 provided the opportunity for Lego to reflect on the meaning of the brand as well as the value of the company's ties with the user community. Knudstorp, who joined the company in 2001, concluded rather quickly that the benefits of collaboration were unmistakable. "We think innovation will come from a dialogue with the community," he told a North American user convention in 2005. This marked the beginning of a new push for openness and collaboration — and innovative products built around the Lego elements.

About the same time that Knudstorp became CEO, more senior managers began realizing that while many of the innovations adult users initiated

## ABOUT THE RESEARCH

Between 2003 and 2011, we engaged in a multisite research program to examine community development and user innovation among adult fans of Lego and to learn about Lego's experiences and practices in working with external communities. We participated in eight conventions in North America, Denmark and Germany. The conventions were attended by between 50 and 400 adult fans, who displayed their innovations and took part in presentations, workshops, competitions, auctions and round-table discussions. We also observed adult users at smaller and locally arranged events such as visits to the Lego offices and the Legoland park in Billund, Denmark; monthly Lego user group meetings; and Lego shopping trips. In total, we conducted 85 hours of observation, which we consolidated into 180 pages of field notes; recorded two hours of video and shot and collected 454 photos; and maintained a file that included physical materials produced by Lego fans (including event programs, event T-shirts, name tags, posters and magazines). We also closely followed adult Lego users on community forums and sites and collected profiles that members uploaded on Lugnet.com, the Lego User Group Network. The forums addressed community membership, Lego hobby activities and tastes and practices related to adult Lego users' innovations. In total, we amassed 1,016 pages of doubled-spaced text.

In addition, we conducted 25 in-depth interviews and several informal interviews with members of the community, face to face or via email or phone. Face-to-face and phone interviews typically lasted between one and two hours. During the research process, the lead author became a member of the Danish Lego User Group and made presentations and led round-table discussions at North American adult user conventions. Many of the findings presented in this paper have been previously shared with adult users at community events and online forums, thus offering the community opportunities to comment on the findings and conclusions.

Finally, we collected data on community web pages where Lego employees communicated with users and text from Lego.com and user community sites regarding the Lego Ambassador Program. This data helped us describe the user community and what ties members together; user innovations and the needs they serve; and what Lego has learned.

were beyond the *design* capabilities of children, they were not necessarily beyond a child's *adoption* capability. For example, vice president (then marketing director) Søren Lund recalled working closely with a community liaison to get adult fans to contribute to the design of the Lego Factory sets that were introduced in 2005. "Our intention was to make it as much of a community project as possible," Lund noted.[4] They began in March 2004 by selecting an adult fan team leader, who set up a secure forum where users could share their designs. In the space of a few short weeks, the level of fan activity was tremendous, Lund noted, adding, "I was overwhelmed by the quality." The success of this project "sent shock waves through our development organization."

Since then, Lego has formalized relationships with the adult fan community through its Ambassador Program. Representatives, drawn from across the community of Lego user groups, provide a fast

and direct way for Lego managers to get in contact with adult fans who may have new product or marketing ideas or be interested in providing feedback on products currently in development.

Lego's relationship with user groups and fans offers significant benefits. Not only do fans inject energy and ideas, but in some cases they help refocus products. For example, during the development of a new version of the Lego Mindstorms programmable robotics kit in 2004, tech-savvy users advised management that the new product would provide many more design opportunities if it worked with a larger selection of sensors. (See "A Sampling of Innovations by Lego Users.") It turned out that one of the users who participated on the development team, John Barnes, was in the business of manufacturing high-tech sensors. By partnering with Barnes' company, Lego was able to offer 12 different types of advanced sensors with Mindstorms NXT, which greatly expanded its capabilities over prior models. Although the sensors were designed and manufactured by Barnes' company, they were marketed through the Lego online shop, making them the first components dedicated to a Lego product to be manufactured by an independent vendor. Without Barnes' involvement, it is unlikely that Lego would have been able to create a profitable business case for the development and sales of the additional sensors.

Similarly, adult fans have helped Lego identify new product lines and distribution strategies, including one new line featuring models of architecturally significant buildings. In developing

## A SAMPLING OF INNOVATIONS BY LEGO USERS

As these examples suggest, the innovations in which adult fans of Lego have played a role are wide ranging.



### Lego Factory sets
As part of the Lego Factory launch in 2005, adult users took part in the design process that resulted in three micro-scale sets: the Lego Factory Amusement Park set, the Lego Factory Airport set, and the Lego Factory Skyline set. The products were age marked 8 years +.



The Lego Factory Hobby Train set includes building instructions for one train model; 29 other models can be downloaded from the Lego website. The product was age marked 10 years +.



### The Lego Modular Buildings series
The Lego Modular Buildings series was originally suggested to Lego by fans through a poll that Lego organized. It comprised six stand-alone buildings that could be joined together. Fans participated in the development of the sets, providing input at stages from the prototypes to the completed designs. All sets were age marked 16 years +.



### Various types of robotic sensors
User involvement in the development of the Lego Mindstorms NXT led to a technological partnership with Lego enthusiast John Barnes, co-owner of HiTechnic. The partnership set the stage for using advanced sensors with Lego Mindstorms, including infrared receiver sensors; sensor multiplexes, which enhanced connectivity; barometric sensors; and touch sensors. The sensors, designed and manufactured by HiTechnic, greatly expanded the possibilities for using Lego Mindstorms.

these products, the company worked closely with Chicago architect and Lego enthusiast Adam Reed Tucker to represent such structures as the Empire State Building, the White House, the Brandenburg Gate and Frank Lloyd Wright's landmark Fallingwater residence in Pennsylvania. After a pilot of the new line was conducted in Chicago, the architectural kits are now sold around the world in outlets such as museums, souvenir shops and bookstores.

Based on its experience working with dedicated users, Lego management has developed an informed view on the circumstances under which collaborating closely with users works well — and on when it doesn't.

**When It Works Well** Collaboration is most successful, Lego management has found, when outside parties have a particular area of expertise, such as architecture or sensor design and manufacture, that individuals within the company don't have. Other reasons to consider partnering are when the target market is too small or a partner's cost structure is much lower (as was the case with the electronic sensors). In such circumstances, Lego has benefited from having passionate fans with deep and specialized knowledge of Lego building along with their own specific expertise. Since many new products fail, having innovations that can be pretested by potential customers helps eliminate bugs and reduce risk.

Cocreating knowledge-intensive innovations with users allows Lego to obtain the skills and knowledge important to these activities. In addition to ad



### Lego Architecture

The Lego Architecture line was codeveloped by Chicago architect and Lego enthusiast Adam Reed Tucker "to capture the essence of a particular landmark into its pure sculptural form, especially at this small scale." The Sears Tower and the John Hancock Building were released in 2008, followed by the Empire State Building, Fallingwater and the Brandenburg Gate, among others. The sets were age marked 10 years+, 12 years+ and 16 years+.

### Lego Jewelry by Lisa Taylor

The Lego Jewelry line was developed by designer Lisa Taylor, who "loved wearing Lego bricks and wanted to wear it in a sophisticated way." Taylor sells the products, which include silver rings and cuff links with interchangeable Lego bricks, on her website, bylisataylor.com. The jewelry is marketed mainly to adults.

hoc collaborations, in recent years Lego has hired more than 20 adult fans. By hiring experienced users, Lego can benefit from the extensive knowledge and skills these users have accumulated over the years.

**When It Causes Difficulties** Collaborating with users has turned out to be less successful in cases where users seek to push the products beyond their intended limits. To achieve extraordinary results, adult Lego fans sometimes promote building techniques that go beyond the parameters of what the products were designed for. From Lego's perspective, the concern is that while many of these techniques add quite stunning expressions and functions, they challenge quality and in most cases are too hard for younger users to build. Whereas the primary end users from Lego's perspective are children, adult fans often think about developing products for other adults.

## Core Principles for Successful Interaction With Users

Based on its experiences working with the user community, Lego has developed a set of principles that summarize what it has learned about collaborating and interacting with knowledgeable users.

**Be clear about rules and expectations.** Without exception, the adult users who collaborate with the Lego Group have busy lives that involve full-time jobs, studies, hobbies, families and so on. When Lego began collaborating with adult fans, there were very few stated rules or expectations about how the process should work. This led to frustrations on both sides. Fans complained about being asked to consider cost and complexity when developing their designs and to adhere to building techniques that met the company's tight quality and safety standards. Lego employees complained that adult fans pushed the limits of the company's rules and regulations and that coordination was difficult because most of the adult fans had full-time jobs and worked on their Lego projects after business hours, at night. Lego learned that it had to be more specific about its expectations upfront, including when its projects would begin and end. The company also learned that adult users were more cooperative when they negotiated expectations with the Lego employees directly involved, rather than with Lego managers

who were not directly engaged in the work.

**Ensure a win-win.** In collaborating with very engaged and skilled users who were contributing their ideas, it was easy for the company to focus on "getting the job done," forgetting that the users had needs that sometimes diverged from those of Lego employees and that the collaborations themselves needed to be rewarding experiences for the users. Developing a win-win mind-set must be a priority. Lego management learned, as studies of innovators have found, that the intrinsic rewards associated with designing and building products are frequently more motivating than financial rewards.[5] Recognizing this, Lego has tended to pay outside collaborators with a combination of experience, access and Lego products. However, users who participate in long-term projects or who provide services that are more like "work" are given a choice: they can receive free products or a more conventional stipend. In business partnerships between Lego and users (for example, in cases such as the architecture project and the sensors), various long-term, fee-based partnership agreements have been negotiated.

**Recognize that outsiders aren't insiders.** Lego employees involved with the user community learned early in the process that while participants were indeed committed to the Lego brand and the Lego brick, they were also attracted to the sense of community they experienced with other adult fans. In fact, it is the relationship with other fans and the input and encouragement they offer that strongly motivate these users to keep raising the creative bar and keep searching for new and better ideas and solutions. User communities are not just extensions of the company — they are independent entities. As a result, members should be treated as passionate, experienced and talented individuals.

**Don't expect one size to fit all.** Lego also learned early on that different users prefer different modes of communication, and different types of innovations call for different environments. As a result, Lego relies on many different collaboration platforms. The simplest are polls and electronic idea boxes, which allow users to give input on predefined topics. A more advanced platform, Lego Digital Designer, allows users to design virtual Lego models and create digital building instructions that

can be shared with other users. It allows innovators with different skill levels to participate.

A newer platform, Lego Cuusoo,[6] allows users to upload designs (drawings, photos, etc.) to a Web page where other Lego users and consumers in general can vote on the design. If a design receives 10,000 votes, Lego agrees to consider it for possible production; if the design is commercialized, innovators receive 1% of the total net sales for their product. In 2011, the Minecraft project received 10,000 votes worldwide within 48 hours.[7] It has also received 30,000 "likes" on the Lego and Minecraft Facebook pages and was tweeted about more than 4,000 times.

Finally, the company shapes new ideas through user panels and virtual project rooms. Typically, these restricted forums gather input from very skilled users on complex, long-term projects. For example, hundreds of beta test users proposed improvements to and reported flaws in the Lego Mindstorms NXT, and several thousand user posts appeared in the virtual project room for Lego's Hobby Train set.

**Be as open as possible.** To protect confidential and proprietary information, companies customarily ask collaborators to sign nondisclosure agreements. That's what Lego did when it launched its Lego Ambassador Program and began collaborating with adult fans. Lego learned two important things: NDAs were effective at preventing the collaborators from sharing information with third parties, but there were unintended consequences. Because Ambassadors took the NDAs seriously, they didn't share their ideas with other adult fans who hadn't signed NDAs. Today, Lego uses NDAs more sparingly, to limit information sharing with third parties only in narrowly defined situations — thus ensuring that collaborators are able to interact with each other to the maximum extent. Lego also attempts to maintain transparency in all matters related to collaboration. For example, it posts detailed descriptions of the criteria for and responsibilities of Lego Ambassadors on its own home page and on several community websites. And the company supports community initiatives aimed at improving idea sharing among community members and advancing innovation.

Cumulatively, the principles we have discussed here help Lego organize collaborations with users in a manner that balances the needs of the company with those of its users. These lessons are applicable to other organizations. Instead of regarding collaboration as something that needs to be managed exclusively by the company, it is fruitful to think of it as an ongoing dialogue between two allies. Both sides contribute important resources to a common purpose. Frequently, the two sets of resources complement each other and advance the conversation and collaboration.

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**6.** Cuusoo in Japanese means "imagination" or "wish."

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