

## CHAPTER 17

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# USER INNOVATION IN THE MUSIC SOFTWARE INDUSTRY

## *The Case of Sibelius*

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### INTRODUCTION

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While writing a big band chart in Sibelius, I found that I spent a lot of time hiding playback-only passages and creating slashes and rhythmic cues in other voices. This plug-in is intended to automate those tasks.

Ross Lafleur

A small piece of software that assists jazz composers in depicting the rhythms on their digital music scores symbolizes the changing role of increasingly active and powerful users within the music industry. ‘Rhythm Section Assistant’ is a plug-in for the Sibelius music notation software which was created by Ross Lafleur in 2006, and which has been downloaded over 15 000 times since its release. The plug-in is one of hundreds which have been developed by enthusiastic customers and users of the Sibelius program who enjoy using the software but, as the above quote indicates, want to improve its use for their own sake and that of others. In creating the little pieces of ‘add-on’ software, these user-innovators represent a shift in the very ways that firms in the creative industries do business.

User innovation is now widely recognized as a potent force in many parts of the economy and society, with significant theoretical, practical, and public policy implications. Innovations that flow from the users (as opposed to the producers) of a technology have been documented in both firms and individual consumers in a wide range of contexts including scientific instruments (e.g. von Hippel, 1976), medical instruments (Lettl et al., 2006), extreme sports (Luthje, 2004), and music software (Jeppesen and Frederiksen, 2006). Recent studies have found significant levels

AQ: Note that the spelling of the author “Stephen Flowers” is given as “Stev-ven Flowers” in TOC and List of Contributors. Hence we have followed the same here. Please confirm.

of user innovation activity amongst individual consumers (von Hippel, de Jong, Flowers, 2012), in manufacturing firms (e.g. Gault and von Hippel, 2009), SMEs (e.g. de Jong and von Hippel, 2008), and in a general industrial population (e.g. Flowers et al. 2009).

Users can be highly active innovators in their own right, creating and distributing their own products or services. Innovation by users may be a challenging, complex, and contested process with users playing an important role in the creation, shaping, and diffusion of new products, services, and ideas. Some users may prefer to modify products that they have purchased or they may wish to provide feedback to firms so that they can improve the products they are able to buy (see von Hippel, 2005; Flowers et al., 2008). Alternatively, other highly creative users can create products, services, or workarounds that compete with or bypass mainstream offerings, thereby more actively resisting 'official' innovations. This form of user innovation, termed Outlaw Innovation (Flowers, 2008) is prevalent in digital environments and has been a constant feature of the creative industries for some time.

The music software industry is an important part of the creative economy that is also a lead sector for the new and emerging relationships between firms and users. Music software is part of the modern software tool industry, producing a range of software toolkits aimed at the professional, domestic, and educational markets. These systems, produced purely as software or as hardware/software combinations, are designed to automate or simplify important aspects of the creative process and include tools to assist in the creation of music scores, record and/or mix live performances, or mix music to create a final master version of a track.

Music software is a good example of a modern information industry in which established firms are located within a complex ecosystem which includes individual users and user communities and which transcends national boundaries. Firms are the commercial actors within this ecosystem, but they operate in a market that is also served by low-cost shareware and software that is developed and distributed by individual users and user communities at no cost. Although some user-developed software is complementary to commercial products, some of the more complex systems developed by user communities could also be viewed as competitor products.

Firms are very important within this ecosystem, and may be dominant. As Di Maria et al. (2012) have discussed in this volume, a major issue for firms is finding ways to set up relationships with, and create value through their user communities. For the music software industry, this presents a particular challenge as firms in this sector have a quite different relationship with their users and consumers to those in other sectors. One major difference is that many users possess the high levels of technical skill required to develop their own music software, as evidenced by the large amount of shareware and freeware available. In this sector users may be consumers, but they may also become collaborators developing software that is complementary to commercial products. Crucially, they may also develop low-cost or no-cost competitor systems or software that is incompatible with commercial offerings and may serve to undermine their market position.

In response, firms in the music software industry have produced the type of tools described by DiMaria and colleagues in this volume, which are designed to improve the creative process for the musicians that use them. Users are often highly demanding and intimately engaged with product functionality and performance, seeking out liked-minded others for discussion. On-line communities are commonplace around this activity and have either emerged spontaneously or been created or supported by firms, with both types then acting as knowledge repositories for firms to draw on. As a result, music software users are likely to play a more central and creative role in the innovation process, and have been drawn into an active role in organizational processes and function. In the following case study we describe how one firm—Sibelius, a world leader in music notation software—have made use of these strategies to harness value from their users.

## SIBELIUS—A USER-LED FIRM

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Sibelius was founded by Ben and Jonathan Finn in 1993 to sell music notation software. Today it is the world market leader in software for writing, teaching, and publishing music notation, with customers in over 100 countries, and has received the prestigious Queen's Award for excellence in innovation. Much of this success can be attributed to the firm's origins in the interests and activities of its founders, which continues to be reflected in the company's products and activities, and the commercial context of the firm that enables users to be much closer to the production process than in more 'traditional' industries such as automobile manufacture—although both sectors create outputs, the architecture of the Sibelius product has been specifically designed to enable users to provide content which supports and extends the core product.

The original 'Sibelius' notation software program was written by the Finn brothers for their own use in 1987, and was written for the Acorn—an early UK home computer which lent itself to ongoing user engagement. Despite its growing commercial success, the firm continues to remain close to its user populations, and users play a hugely popular role in product development and support. Sibelius has a series of highly active user communities around its portfolio of products, some of which have emerged spontaneously and some of which have been deployed by the firm. One important group is the user community that creates and shares software (also referred to as 'plug-ins') that provides additional functionality to the Sibelius program; users also develop content including sound sets, drum loops, demos, tutorials, and general feedback. A great deal of effort has been expended in maintaining some form of presence within these professional and educational music communities, and users are actively encouraged to both engage in innovation around the core-product and also support other users.

## HARNESSING USER FEEDBACK AND SUPPORT THROUGH COMMUNITIES

For firms engaged in innovation activities, user feedback and involvement are extremely important aspects of the product development process; for those involved in user innovation, such as those in the music software industry, the practice of building strong relationships with users is a key part of the business model. Sibelius has developed several means of harnessing user feedback, including its Chat Pages, a series of online discussion forums for user feedback and support hosted on the homepage. These pages are a central feature of the firm's approach in building sustainable relationships with its user base. Initially set up as a technical support forum in which users were able to discuss the software with each other, the pages were subsequently modified to allow the company to build up a knowledge base which could then be developed into a set of searchable questions and answers. In its early incarnation, only Sibelius users were allowed to see and use the forum—in order to see it, one had to be logged in as a user, and in order to be logged in one had to have a Sibelius serial number. However, in its current form, only Sibelius users are allowed to interact on it but the site can now be openly read by anyone online.

The questions and answers have also been developed into a separate Frequently Asked Questions page on the site, but the Chat Pages remain and the two sections complement each other. All historical articles are also archived and searchable. Although the individuals who populate the Chat Page only make up a small percentage of Sibelius users, many of them are long-term Sibelius customers who possess greater technical knowledge than the majority and represent a significant resource. These types of approaches illustrate how firms enable users to provide ongoing customer support which draws on a more complex and varied knowledge base than resides within the company itself.

## COMMUNITIES, LEAD-USERS AND PLUG-INS

Beyond support, user innovators often also develop a large number of complementary products around the company's core offering. For Sibelius users, these products include software plug-ins, sounds, scores, and music fonts.<sup>1</sup> To do so is no small feat and requires at the base entry level, significant musical ability. At its most sophisticated level, developing this type of content also require users to possess high-level skills in programming, design, or musical arrangement. Of the large volume of user-generated resources the software plug-in is perhaps the most complex, requiring both deep musical understanding and high-level programming ability.

Plug-ins provides additional functionality to the basic Sibelius program which allows users to do things such as import in music from other notation programs, alternate time

signatures, and emulate Mozart's 'musical dice' game to randomly compose music. An active community of users is engaged in developing these plug-ins, and their activities are an integral part of Sibelius' R&D process. Although the installed base of Sibelius is very large, the plug-in developer community is relatively small. Over 150 user-developed plug-ins are currently freely available on the company website, and a further 110 user-developed plug-ins that have been acquired<sup>2</sup> and included within their latest software release. The value created by these plug-ins, both to the individual user and the firm, is significant, with the freely available plug-ins having generated nearly 600 000 individual downloads. The top five plug-ins alone account for some nearly 190 000 downloads, with the top user-developed plug-in (German Chord Names<sup>3</sup>) being downloaded over 86 000 times in its own right. In addition to plug-ins, Sibelius also encourages users to share the music that they have developed using their products. SibeliusMusic.com is a separate website that enables users to self-publish scores using a specialist plug-in, Scorch, that was developed by Sibelius specifically for this purpose. The site currently has over 95 000 scores available as pay-per download, and some free scores.

'Lead users' are a key part of this user innovation ecosystem. Within the pool of plug-in developers one individual, the super-developer Bob Zawalich, is responsible for generating a large proportion of the plug-ins. Zawalich is a retired Microsoft programmer who was involved in developing the macro function in Word, but is also an active guitarist and composer. He is a highly productive and innovative user who combines high level musical and programming ability to enable him to produce a large number of complex plug-ins. Zawalich has developed a large percentage of the plug-ins that are made freely available on the Sibelius website, and his plug-ins have been downloaded by other users over 200 000 times. Zawalich's productivity—and the popularity of his offerings—demonstrates that an often comparatively tiny population of 'lead' users bearing exceptional technical skills can provide disproportionate value to both users and the firm.

## PRODUCT ARCHITECTURE AND USER TOOLKITS

Enabling user-led innovation can also require a firm to adjust the nature of their core product offering. To facilitate user activity, the Sibelius core product has been designed in such a way that users can develop and share their own content and applications. The firm's products are not fully 'open' in the accepted sense but the APIs of part of the product architecture have been published, enabling users to innovate around the core product. This partial opening of the product architecture was a formal recognition that users had needs that could not be anticipated by Sibelius and, moreover, that some users were able to create plug-ins that would satisfy these needs. By partially opening the product architecture in this way, Sibelius becomes a platform around which users are able to innovate.

As described in the previous chapter, toolkits provide a way for firms to transfer manufacturing capability to users, and Sibelius has also provided a series of toolkits

that provide users with the means to create their own applications and other content. To enable users to create plug-ins Sibelius created their own programming language called Manuscript, a specialist music-based programming language. Sibelius provides a range of resources around Manuscript, including a tutorial, a plug-in developer mailing list, and a Tech Support forum. User-developed plug-ins are effectively open-source, and the code may be viewed by any user who wishes to develop their own plug-in. Sibelius provides a series of Sound Sets that are designed for use with synthesizers, and also makes available a Sound Set editor for users.

The Sibelius plug-in developer community also makes and shares their own user-developed tools on an ongoing basis. The Sibelius plug-in developer community has developed into a toolmaking community in which tools are developed and shared, with the result that the user-developed plug-ins have become more ambitious and sophisticated. This dual approach illustrates how multiple lines of engagement must often be developed by firms in order to cater to, and engage with, the variant levels of expertise in their user base.

## CONCLUSION

Creating sustainable value from enthusiastic and innovative users is a challenge for many firms in the creative industries in an age of fast-moving democratized digital innovation. Sibelius is an example of a company that has benefited enormously from its large population of committed and eager users, who continue to be a source of feedback, ideas, and software innovations, and who are an important aspect of the wider R&D environment that now surrounds the firm. Although a tiny percentage of the functionality of the product is user-built, nearly all of the features added to the program in the past five years have been derived in some form or another from user suggestions. As this case indicates, engaging with a wide group of keen and engaged users requires highly specific strategies engineered around their musical and technological capabilities, their behaviour, and their needs, and the Sibelius Group make use of a tailored mix of sponsored and autonomous communities, toolkits, partially open product architecture, and business model development to get the most out of their users.

## NOTES

1. A list of third-party resources can be found here: <http://www.sibelius.com/download/plugins/index.html>
2. These are acquired from the user for around \$500 US per plug-in.
3. This plug-in converts chord symbols text in your score between the German (B = B flat, H = B) and standard (Bb = B flat, B = B) conventions for chord symbols. This is useful when transposing German chord symbols (e.g. convert them to standard chord symbols, transpose, then convert them back to German chord symbols).

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