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Software innovation: peripheral users are also key players

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People at the periphery of a software user community, who also participate in other communities, contribute just as much to innovation as lead users, shows new research.

New research has produced a surprising finding in the area of user-driven innovation. Up to now, it has been commonly believed that groundbreaking innovation primarily comes from lead users. But now it seems that important breakthroughs come just as often from users with a peripheral position in the user community.

"Our results show that change and innovation typically come from someone who has peripheral involvement in a user community, but also has a large network that covers many different communities," says Lars Frederiksen of Aarhus University, who together with Linus Dahlander at the European School of Management and Technology in Berlin has conducted the research published in Organization Science.

Forum postings analysed

The study involved processing 151,000 messages posted among 8,500 users on the online forum Propellerhead, a company that produces a popular software for musicians.

The users give each other help and advice in Propellerhead's forums, where they develop new functions and programs, brainstorm, troubleshoot and share music.

Frederiksen and Dahlander asked external experts and Propellerhead's management to assess which user improvements were the most innovative, thereby revealing the surprising finding.

Peripheral users are key contributors

"There has been a lot of focus on lead users. But they have a tendency to become narrow-minded and conventional, although they still contribute positively to innovation," says Frederiksen.

Their research reveals that people who are more peripheral in the community, but at the same time take part in other communities, are key providers of new ideas and technical solutions. They do not necessarily contribute more than lead users, but the surprising finding is that they contribute just as much, he says.

"Unlike lead users, peripheral users do not suffer from tunnel vision, since they can typically provide more perspective and external knowledge. They function as knowledge-brokers, who bind communities together."

Broadening the approach

Frederiksen believes that companies and public sector organisations engaged in user-driven innovation can

benefit from broadening out their approach in the light of the new results.

"There are great benefits associated with having better knowledge of where people are positioned in the user community," he says. "This can be achieved by collecting data on where users are active, how much they communicate with each other, and what they are specifically doing."

Active community invaluable

An active user community is invaluable to a software producer. Initially, committed users help each other, which saves large sums in support funding. But the product itself is also greatly improved through user extensions to the core program.

Users have for example developed programs that make the Propellerhead program work with similar music programs, and further development has been carried out in close interplay with users.

A number of company start-ups have also emerged from the forum. A frequent community user for example developed a free application, which enabled the music program to function in live situations.

User relations should be surveyed

As this user improved the application, he started selling it instead of giving it away. Today he has a growing company employing several people. Initiatives like this show how both the users and Propellerhead generate more value from active user development.

The research shows that it is not enough to look only at the personality features of innovative users to understand their behaviour. Their internal and external social relations also need to be surveyed to explain their innovation activity. More focus needs to be placed on an individual's position in various networks, and the span between their internal and external network activity.

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[Networks play an important role in user-driven innovation. (Photo: Colourbox)](#) [10]
[Until now, it was commonly thought that user-driven innovation was primarily generated by lead users. But new research shows that it is equally generated by peripheral users who participate in several different forums. (Photo: Colourbox)](#) [11]
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Fact box

How the research was conducted

The research findings from the Propellerhead community were generated by triangulating between data from questionnaires, digital monitoring and social network analysis, as well as content coding 5,000 individual messages.

The data material consisted of about 151,000 messages between 8,500 people.

Interviews were also conducted with users, product developers and management at Propellerhead.

[Lars Frederiksen's profile](#) [13]

[The Core and Cosmopolitans: A Relational View of Innovation in User Communities (Organizations Science)](http://orgsci.journal.informs.org/content/early/2011/07/05/orsc.1110.0673.abstract) [14] [Propellerhead Community website](http://www.propellerheads.se/) [15]

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