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FORMULATING AN OPEN SOURCE BUSINESS MODEL REQUIRES COMMUNITY SEGMENTATION AND TARGETED MARKETING^(*)

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Abstract

From a commercial open source company's point of view, open source is ideally the ultimate in “grass roots” marketing where people learn by word-of-mouth about the project and where they volunteer their time and effort, resulting in a vibrant community that benefits the company in many ways. This enables an open source company to enjoy major advantages that do not normally accrue to proprietary software companies e.g. they do not need to spend resources on traditional marketing activities and furthermore, having this community support can help ensure the longevity of the project and company.

While this ideal may apply to a handful of open source projects, where they achieve a large critical mass of a community which lends itself to a natural form of monetization, for the vast majority of open source companies, it is not the case of “build it and they will come”. Instead, most open source companies need to understand who comprises their community so they can formulate a viable business model. In particular, they need to understand that communities are comprised of heterogeneous types of people, each of which have their own interests, motivation, needs and ability to be monetized.

Open source companies need to identify the subgroups in their community, decide which ones to deliberately focus on, and choose the best way to leverage them. This is indispensable for determining how best to monetize the interest in their software, ideally without ruffling the community spirit that differentiates their software from proprietary offerings. And this is where “old fashioned” marketing can help. This means understanding

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your user base and what makes them tick, determining their needs, and formulating products and services that people are willing to pay for. The sooner an open source company understands that it needs to practice traditional marketing techniques such as segmentation and target marketing, the faster they will hit on the business model formula that enables their company to succeed. These techniques need to be adapted for the open source world, which requires the blending of traditional marketing techniques and community relations.

The risk of treating one's community in an undifferentiated manner and applying a generic, formulaic business model is that a company will fail to generate significant revenue as well as alienate a community that could abandon them. As a community is perhaps the most distinctive asset of an open source company, losing its community is tantamount to death. If the community is not properly nurtured and leveraged, an open source company's potential will not be realized.

This paper aims at describing, through case study research, a generic approach for how commercial open source companies can segment their community to aid in their formulation of a business model and marketing plans to reach their potential. It is for anyone who works in an open source company or project who is trying to determine a viable business model.

The paper is structured in three parts: the first part outlines the research question and methodology. The second part proposes a way that an open source company can segment its community. The final part analyzes the Funambol experience, describing how the company segmented its community and created open source programs to nurture and leverage it.

1. Does Open Source need Marketing and Segmentation?

For many (Cherkoff 2005), open source is meant to be a disruptive business model where the conventional laws of business and marketing do not apply, e.g. it is ideally meant to be the ultimate in “viral marketing” (Rushkoff 1994, Helm 2000, Skrob 2005) or “guerrilla marketing” (Levinson 1984), where only interested parties raise their hands and volunteers give their time and/or money to the cause, and where you do not need to spend much time or money on traditional marketing. While that may be the case for some open source projects, especially those that do not need to make money, and while it may work for start-ups and early stage projects (Rosenberg 2005), commercial established open source companies need to determine how they can monetize the interest in their software, ideally without disturbing the open source philosophy that differentiates their software from commercial offerings. This is where time-honored marketing principles and best practices apply. This means understanding your community and what makes users tick, determining their needs and interests, and formulating products and services that your organization can offer and that the community is likely to want and buy. The most successful open source companies such as MySQL, Red Hat, SugarCRM and Zimbra all do this to a certain extent, albeit in a stylistically different way than pure commercial companies. The sooner an open source company comes to grip with the reality that it needs to practice standard marketing

techniques such as segmentation, target marketing, and direct marketing, the better they will be. Obviously, these techniques need to be adapted and adjusted to take into account the appropriate ways to communicate and interact with open source community members, so we are talking about the blending of two disciplines, marketing and community relations.

A widespread stereotype about open source is that communities mainly consist of hardcode hackers who only contribute code. In reality, communities are comprised of many different types of people, each of whom have their own interests, motivation, needs, and ability to contribute. As a project experiences success and crosses the “chasm” between the early and mainstream stages (Moore 2002), the community is composed not only by “techies” (developers and IT people), who are the typical early adopters, but increasingly by non-technical people, i.e. end users looking for products and solutions. Moreover, communities are increasingly composed not of individuals but by professionals who work in companies such as system integrators, original equipment manufacturers, service providers, etc. and are involved professionally to further the business objectives of their corporations. The fact that communities have corporate members is relevant because business-to-business marketing requires a different approach than does marketing to individuals/consumers.

Thus, communities are really heterogeneous groups that need to be addressed differently: their various people and segments require communication through different channels with different messages. An open source company has to identify the different groups in the community, decide which ones it is going to address, and choose the way to best leverage the target groups. Community segmentation and marketing are essential for designing effective business models and actions.

The risk of unfocused actions is to not energize the community which could result in losing the unique competitive advantage distinguishing open source companies. The community is the primary distinctive asset of an open source company; if not properly leveraged and nurtured, this “disruptive” potential (Christensen 1997) can remain unexploited (Onetti and Capobianco 2005). Being open source is not itself a guarantee of success, as there are plenty of examples of companies without active communities. Anyone can go to SourceForge and see many projects that languish because there is minimal community involvement; furthermore, projects are like “stars”, they can shine for periods of time but if they do not continuously renew their energy, they can burn out. Consider the case of a highly popular and publicized open source project such as Evolution, a one-time alternative to MS Outlook, that has languished.

Recognizing that your community consists of several types of people and grouping them according to their needs and profiles has broad implications for the business model in terms of how to best leverage each of these groups.

In this paper, we will present the Funambol experience, describing how the company segmented its community and the open source programs it launched in the last two years, providing evidence and data. Moreover it will discuss which ones worked and did not

work, their impact on the company business model and how this has shaped Funambol's business and marketing plans.

2. Research Methodology and Contribution

In this paper, we provide insight into the growth of an open source project from a business perspective. This is an emerging phenomena which has not been addressed effectively in the literature. Many studies document the “development perspective” of open source by examining lines of code, version control methods, etc. but few have effectively addressed the “business perspective” and, particularly, reasoning behind the appropriate design of a marketing plan and how it impacts the evolution of a business model.

The paper is based on a qualitative methodology (single case study) which allows the study of the business in its real context (Yin 1989, Eisenhardt 1989) and fits with emerging phenomena (Maxwell 1996, Padgett 1998). It is the case of open source and its recent business orientation: among others, Moczar (2005) talks about “commercial” open source for distinguishing the recent evolution of the movement from its “volunteer” origin.

The unit of analysis is an open source U.S. multinational corporation in the software industry, the Funambol Group. Funambol is the leading provider of open source push email and personal information management (PIM) synchronization for consumers and is supported by a global network of users and developers representing more than 1,000,000 downloads and 10,000 contributors in more than 200 countries. The commercial version of Funambol software has been deployed at wireless carriers, Fortune 100 enterprises, hardware ODMs and ISVs including customers such as EarthLink and Computer Associates. Funambol is headquartered in Redwood City, California with an R&D center in Italy.

The empirical research was based on interviews with managers and employees involved in the different corporate functions (Finance, Operations, Sales, Marketing, Product Management, and Engineering). 13 open-ended and semi-structured interviews were conducted at the executive (6 interviews) and operational (7 interviews) levels. The interviews covered topics such as the past history and growth of the firm, its success factors, anecdotes on the firm's development, relationships with the open source community, work and management beliefs and marketing, sales and production techniques. Overall, about 20 hours of interviews were conducted. Participant observation and analysis of internal and official documents complemented the interviews. The active participation of company managers and executives, particularly of the CEO and the VP Marketing, helped to develop a more comprehensive and deeper analysis, so as to increase the external validity of the analytical construct.

The research is ongoing. This paper is focused on gaining an understanding of open source business models. We aim to adopt a wider approach in future research, investigating other open source companies.

We expect this paper to be interesting to both researchers and practitioners alike. Marketing for open source touches several aspects of academia and the enterprise. Academic interest with respect to this area is in studying how marketing and segmentation techniques can work for open source companies. Practitioner interest will be in regard to evolving business models and strategies for sustainable revenue streams.

3. Literature Background: Market Segmentation

The discipline of marketing calls for understanding customers and satisfying their needs better than competition (among the others, Baker 2000, Doyle 1998, Kotler 1999 and 2002). It recognizes that different customers have different needs and interests, and it is rarely possible to satisfy all customers by treating them with the same offering.

Market segmentation is the process of identifying portions of a market that are different from one another and of dividing the market into distinct segments that behave in the same way or have similar needs. Because each segment is fairly homogeneous in their needs and attitudes, they are likely to respond similarly to a given marketing message and action. Therefore, one essential element of a marketing strategy is to identify different market segments.

Markets can be segmented according to a number of general criteria, such as geography, demographic, behavior, psychographic traits or industrial needs. One basic distinction is between retail consumers that require a "B2C" (business-to-consumer) marketing approach and industrial/corporate people that require a "B2B" (business-to-business) approach. Although B2B segmentation has similar objectives and it overlaps with B2C marketing in many ways, B2B segmentation and marketing require a different approach.

The process of segmentation is distinct and preliminary from targeting (choosing which segments to address) and positioning (designing an appropriate business strategy for each segment) (Porter 1988).

Improved segmentation can lead to significantly improved business effectiveness. The main steps can be described as follows: identifying segments of similar customers and potential customers; prioritizing and choosing groups to address; understanding their needs and interests; and designing appropriate marketing strategies for each chosen segment.

4. Segmenting an Open Source Community

An open source community often consists of an assortment of people. There are not only developers, but end users, IT people, ISVs, SIs, ODMs, partners, etc. Segmentation helps by identifying these distinct groups. One question we will try to answer is how it is possible to segment an open source community.

Note that for this paper, we are broadly defining the use of the term "community" to include everyone who participates in an open source community. This includes people who download project software and documentation, read or post messages to community mailing lists, visit the project website looking for project information, and participate in project events such as webinars. This definition of community may be somewhat different than a more narrowly defined group of hard core developer enthusiasts but in our experience, the broader use of the term community is more relevant for an open source community. Note that it does not necessarily include commercial customers, partners, etc., though there is likely to be some natural overlap.

A community can be segmented according to several characteristics. We could refer to demographic variables such as age and technical skills (therefore dividing community members into "techies" and "unskilled" individuals), or psychographic characteristics, such

as the purpose of community involvement (telling apart people who operate for business purposes from individuals moved by hobby/volunteering aims). Moreover, for corporate community members, we could segment using typical B2B criteria, e.g. dividing them by company size (discerning SMEs from large corporate), location, industry and/or business type (e.g. distinguishing among service providers, system integrators, independent software vendors, device manufacturers, and so on).

We propose a quite different way that an open source company can initially segment its community. This is a generic framework that applies to any commercial open source company, though each company must customize it according to their own situation.

Our community segmentation approach is built starting from the business model and strategy used by the open source company. If the ultimate target for marketing is to support and improve the company business, segmentation efforts have to be addressed in this direction.

With this perspective, a community might be segmented using the following dimensions:

- **Financial Impact**, i.e. the value the different groups can provide to the open source company, ranging from indirect to direct monetization, or non-monetary contribution to monetary. As a result, we could plot the different groups in the community according to their financial importance, i.e. the value generated for the company. By "financial impact", we mean both direct benefit, like revenue enhancers, and indirect benefit, such as cost savings.
- **Strategic Importance**, i.e. the relevance of the benefit provided with respect to the overall business strategy of the company. Beside the value generated by each group, the impact on the corporate strategy has to be considered as well. For example, for a company targeting consumers, enterprises do not represent a strategic priority. As a consequence, marketing effort should be focused on community groups that are closer to the core business strategy.

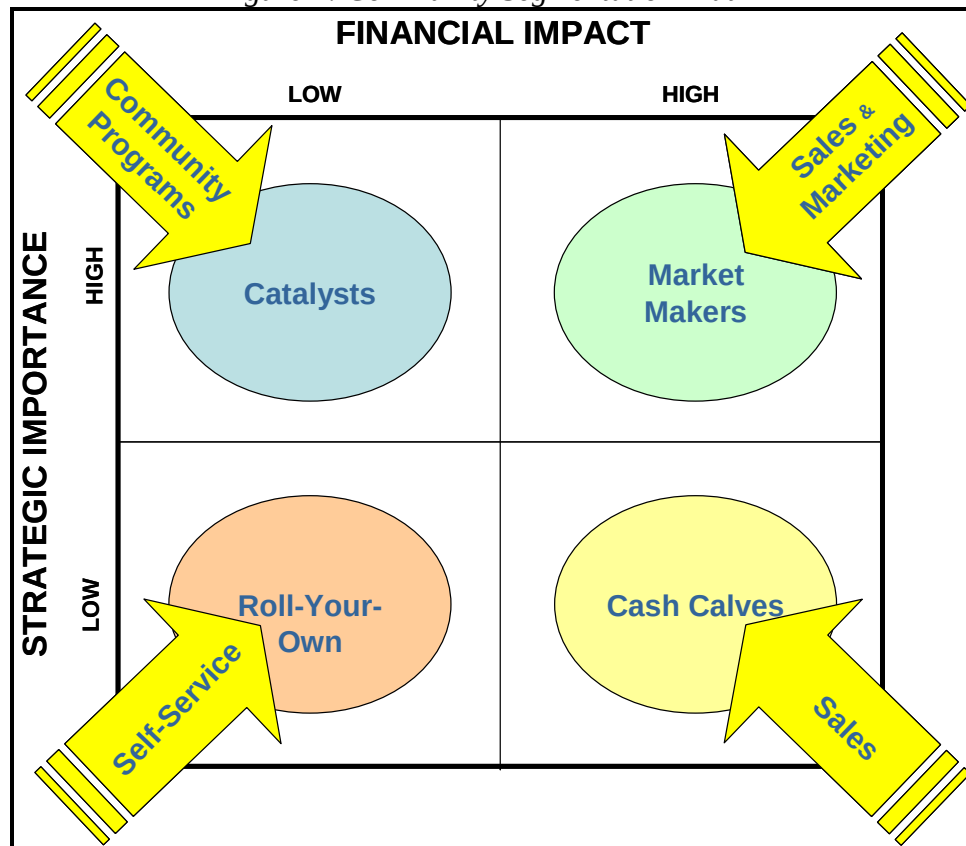
Jointly considering these dimensions, it is possible to construct a matrix that identifies four main sub-groups that a community could be segmented into by an open source company (see *Figure 1*).

- **Catalysts**: they are the enablers of the market: they do not heavily impact on the financial side (especially in the short term), but help the open source project the company is built around to grow. As a consequence, they are critical for the success of the company. They should be leveraged and addressed with Community Programs, i.e. with dedicated marketing actions able to keep them involved with the company and the project.
- **Market Makers**: these are the entities that truly "make" the market for an open source company: they are strategic paying customers. They are the target of both marketing and sales efforts. In this case, marketing efforts are more traditional than in the Catalysts case.

- **Cash Calves:** they are not core customers but they can help the open source company generate some revenue. They are a pure sales target. Only a little money needs to be invested on the marketing side, considering their distance from the company's core business model.
- **Roll-Your-Own:** they are groups that are far from the core business and low revenue contributors. They benefit from the open source company but typically they give little back. The approach to be followed with these groups is "Do-It-Yourself": the company does not need to invest money to support them, on either the marketing or sales side.

The matrix is a tool that can help organizations analyze the impact that different groups could have on their business model, which can help them decide which groups to focus on. This is often a very difficult decision, especially for a start-up in a big market, where there are several choices and it is not obvious which way to go. Often, the decision is 100% critical as if the company makes a right move, it can really prosper, but if they make a wrong move, the company can be jeopardized. Once an open source company understands which subgroups are the most important, it can focus on them using a mixture of traditional B2B and community marketing techniques.

Figure 1: Community Segmentation Matrix



Source: Onetti and Steger (2007)

In the next part of the paper, we present the Funambol experience, describing how the company segmented its community and the resulting open source programs it launched during the past two years. Moreover, it discusses which ones worked and did not work, their impact on the company business model and how this has shaped Funambol's plans.

5. Community Segmentation and Effort: Funambol Experience

Funambol identified several groups in its community¹ and what it could potentially get back from them:

- for professional end users ("prosumers"), you can get testing and product information
- for non-technical end users, you can get market information and simple testing
- for open source developers, you can get software contributions (e.g. additional functionality), quality assurance, device compatibility, product feedback and community influence
- for system integrators, you can get value by selling training and support, plus accelerated introductions into prospective customers and inclusion in their projects
- for enterprise IT personnel, you can generate revenue by selling subscriptions consisting of training, support and deployment services; moreover, they can act as references for other buyers
- for ODMs (original device manufacturers), you get value by licensing the software and/or selling professional services, training, and support
- for ISVs (independent software vendors), you can make money providing professional services
- for mobile telecommunication operators, you can sell your software or a hosted service
- for channel partners (VARs/VADs), you can sell them training and certification programs and get revenue from the resale of your product
- for other users, such as students, you can not sell anything but you could still get significant value e.g. word-of-mouth to other potential community members

After identifying the type of benefit that you can receive from each group, the related value has to be assessed as does the strategic impact in terms of proximity to the core business.

Table 1 summarizes the output of this analysis, stressing the value and the strategic relevance of the contribution for each group in the Funambol community, while *Figure 2* shows how the groups are plotted in the Figure 1 matrix.

¹ For many open source projects, the identification of subgroups via their "function/purpose" is the most natural and useful way to classify them with respect to understanding their impact on the company's strategy. In Funambol case, this was possible due to its history of interactions with the community where it could see that there were sizable numbers of members in each of these subgroups.

It is implicit that these evaluations are directly related to the company business model. Funambol's core strategy targets mass market consumers through mobile operators and is based on Dual Licensing².

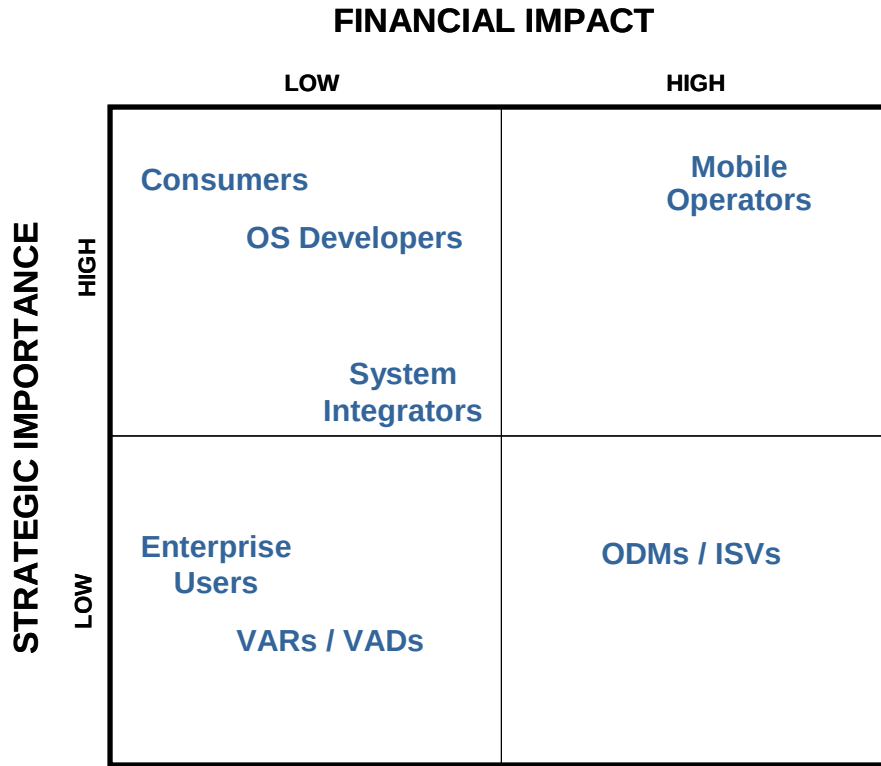
Therefore, end users are considered as Catalysts, because they can help the company create the market: the more they use the product, the more appealing Funambol is to mobile operators. Open source developers are Catalysts, because their development and QA effort can contribute to improving the company offering and reducing the time to market. Mobile operators are Market Makers, while ODMs and ISVs are Cash Calves. Enterprises are not considered a primary target by Funambol and fall into the Roll-Your-Own quadrant.

Table 1: Community Segmentation Output for Funambol

GROUP	BENEFIT	FINANCIAL IMPACT	STRATEGIC RELEVANCE
Professional end users (consumers)	Testing and product information	Cost savings – low	Core - high
Non-technical end users (consumers)	Market information and basic testing	Cost savings - low	Core – high
Open source developers	Software contribution, quality assurance, device compatibility, product feedback, community influence	Cost savings – medium	High/medium (depending on the kind of contribution provided)
System integrators	Money by training and support, plus inclusion in their projects	Revenue enhancer - medium	Medium/high
Enterprise IT personnel	Money by subscription (e.g. training, support and deployment services, advanced license) and references for other buyers	Revenue enhancer – low	Medium/low
ODMs	Money by licensing the software and/or selling professional services, training, and support	Revenue enhancer – high	Medium/low
ISVs	Money by providing professional services	Revenue enhancer – high	Medium/low
Mobile telecommunication operators	Money by selling your software or a hosted service	Revenue enhancer – high	Core – high
Channel partners (VARs/VADs)	Money by selling training and certification programs and revenue from the reselling of your product	Revenue enhancer – medium/low	Low

² About how license impacts the business model, see Onetti and Verma (2007).

Figure 2: Community Segmentation Matrix for Funambol



Source: Onetti and Steger (2007)

Table 1 presents potential community contributions. To make these happen, two standard marketing principles must be followed:

- target segments must be chosen since it is often impossible and ineffective to address too many segments in a heterogeneous community; marketing should focus on the most relevant groups, i.e. Market Makers and Catalysts.
- each group must be addressed properly, i.e. through the appropriate combination of the right messages, offers, mediums, etc. As a consequence, one marketing program may work effectively with one segment but not with another.

In the final part of the paper we will describe the open source programs that Funambol launched in the past two years, discussing which ones worked and did not work and the reasons behind this.

6. Open Source Marketing Programs: Funambol Experience

In this section, we present the open source community programs that Funambol recently launched. For each one, we highlight the desired benefit and the community groups that were targeted.

Program: Funambol Community Research Survey

Target: whole Community

Benefit: insight about Community composition and interests

As an open source company, it is not always easy to know what type of people comprise your community or what their interest is vis-à-vis your project. This is because there is often a fair amount of anonymity associated with people in the community: while some people are willing to identify themselves and be recognized, others do not want to do so. This makes it more difficult to really know who comprises your community. Getting information represents the cornerstone of community segmentation as it allows you to identify and better know the different groups in your community, gaining valuable insight about it. Funambol routinely polls its community to learn more about it. Doing so, Funambol learned that there were six different types of people that primarily constituted its community: mobile operators/service providers, system integrators, ISVs, ODMs, enterprise IT people and end users looking for a mobile solution. Funambol learned a lot about what their interests were, e.g. what interfaces to backend systems they would like, which devices they preferred, and much more. This made it much easier to collaborate with the community and to create a product roadmap that kept the community engaged. It also allowed Funambol to think about relevant and appropriate ways to monetize different groups, as each represented a different type of potential to the company.

Program: Funambol Community Bag-a-Bug Program

Target: open source developers

Benefit: quality assurance and software contribution

Value: cost savings

This program aims at recognizing and rewarding community members for finding and fixing bugs in the source code. They earn one point for finding a bug and three points for fixing one. Funambol maintains on its website an online scoreboard where everyone can see the leading contributors. At the end of every quarter, the leading contributors earn rewards such as a Sony PlayStation or iPod. During a recent three month span, when Funambol introduced a new beta version of its software, the community found approximately 100 bugs and was able to fix about half of them. Funambol estimated that this saved the company \$200,000 by not having to devote more internal QA and engineering resources to the task. Most of the bugs were found and fixed by open source developers as opposed to other community subgroups. The implication for the business model was that this allowed Funambol to optimize development resources, as well as enhance the satisfaction of open source developers, that is important to the company's success.

Program: Funambol Community Hero Program**Target:** open source developers**Benefit:** community satisfaction**Value:** cost savings

This program encourages community members to help each other by answering their technical questions on mailing lists by getting recognized and rewarded, similarly to the Bag-a-Bug program. For every question that a community member answered, they would earn a point, but only when the original question poser indicated whether the provided response answered their question. This program was not as successful as Bag-a-Bug because many people refused to provide feedback on the quality of responses, thus the feedback loop was broken. Funambol is getting ready to try a different approach, which is to rank people based on the volume of responses they make, combined with a casual qualitative assessment of their work, so that people can earn ratings such as Expert, Intermediate and Junior Member, which leads to increased community status and recognition.

Program: Code Sniper**Target:** open source developers**Benefit:** software contribution**Value:** cost savings

Based on the results of a community survey, Funambol determined that the community wanted more software components than the company's internal engineering team had the bandwidth to deliver. The output was a list of projects that Funambol knew the community wanted and that it was not going to be able to get to in the short term. Funambol publicized this list and offered payment bounties ranging from \$500 to \$3,000 for people to work on the projects. Within the first three months, 12 people signed up to work on 10 projects (in two cases, two people decided to work on a project together). The program was successful as it resulted in increasing the rate at which community projects were developed by about 50%. All of the code that was developed was open source, so it mutually benefited the community and the company. It also resulted in additional people becoming much more technically familiar with Funambol software, which was an additional benefit. There are some people who do not believe that community members should be paid money for their efforts, as it goes against the grain of open source, but Funambol did not experience this feedback from its community members, possibly because Funambol already is a commercial open source project.

Program: Phone Sniper**Target:** professional end users**Benefit:** device compatibility**Value:** cost savings

This program was designed to encourage the participation of other groups in Funambol community, not just open source developers. It paid people \$25 to test their mobile phone against a Funambol server to see whether their phone was compatible for push email and PIM synchronization. Even though Funambol software is based on an industry standard, SyncML, the standard is not implemented consistently by every device manufacturer, which requires testing and, in some cases, adjustments. The combination of mobile devices, mobile operators and geographic locations is in the millions, so testing all of these with paid personnel is cost-prohibitive. By involving members of the community to assist corporate efforts, Funambol can provide the most comprehensive device compatibility in the industry. Within 3 months of launching the program, over 200 people signed up to test over 300 phones, which Funambol estimated saved them a significant amount of money. Furthermore, it injected a viral element into our community – get paid for using Funambol software – that encouraged other people to learn about the company and project. In the next phase of this program, Funambol is going to automate the phone sniper testing process even further, to allow even more non-technical people to participate. All in all, this gives Funambol much greater device compatibility and geographic coverage than proprietary software companies, i.e. it exploits the open source competitive advantage.

Program: Funambol Mobile Email Survey**Target:** end users (consumers)**Benefit:** market information**Value:** cost savings

Funambol was able to ask its community to help in other ways, such as understanding the broader market for its software. For example, Funambol recently conducted a survey of its community to gain insight into their needs for consumer mobile email. The data were collected through an on-line questionnaire. Although this is not a random sample that reflects the overall population, it still provides extremely useful information about the characteristics and behavioural patterns of mobile email users. This enables Funambol to adjust its business model, e.g. by optimizing pricing and product priorities.

7. Lessons Learned

- 1) Know your community: ask and answer the fundamental marketing questions: how many segments comprise your community? Are they individuals or enterprises? Why do they participate in the community (what reasons motivate them - business purpose or volunteering/hobby)? Are they active - do they contribute and if yes, how and how much?
- 2) Choose the key segments - which are the most relevant segments for your business model?
- 3) Build the marketing actions to address the target segments, do not waste resources on the non-strategic groups.
- 4) Be ready to invest in the community: there are some people who do not believe that community members should be rewarded with money, as it goes against the spirit of open source, but Funambol did not experience this.
- 5) Continuously interact and learn about your community, as this is the primary way to understand their needs and how these can be leveraged for mutual benefit.

In summary, the more you know about your community, the more you can determine your optimal business model as well as the marketing programs that need to be implemented to achieve it.

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