

The Freemium Technology and Services Business model.

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Abstract

This paper describes a common business model in the software industry, the dual licensing model which we extend to the freemium and two-world model. This model is extended to the 3DP economy, housing, clothing, food and technology. The model combines the dual source licensing of resilient lego homes, MRE food and all weather clothing and designs.

Several case studies are described, such as MRE food and the design of 3D printers to propagate 3DP.

The freemium model is proven to increase product diffusion, overall sales and is a better promotional mechanism compared to internet and media advertising.

Keywords: Freemium, Two-World, Dual- Licensing, 3DP, Case Studies.

Introduction.

The Open Source movement.

While cognizant of the fact that both, the free software movement and the open source movement, share similarities in practical recommendations regarding open source, the free software movement fervently continues to distinguish themselves from the open source movement entirely.

In February 1998 the open source movement was adopted, formalized, and spearheaded by the Open Source Initiative, an organization formed to market software "As something more amenable to commercial business use" The OSI owns the trademark "Open Source" The main tool they adopted for this was The Open Source Definition.

Microsoft's change in attitude about open source

and efforts to build a stronger open source community is evidence of the growing adoption and adaptation of open source.

Open-Design Movement

More recently, principles of open design have been related to the free software and open source movements. (MacDonald 2016; Binnekamp, van Loon, and Barendse 2006; Cruickshank 2016)

Together they established the Open Design Foundation as a non-profit corporation, and set out to develop an Open Design Definition.

The principles of open design are closely similar to those of open-source hardware design, which emerged in March 1998 when Reinoud Lamberts of the Delft University of Technology proposed on his "Open Design Circuits" website, the creation of a hardware design community in the spirit of free software.

Business Models For Open-Source Software

A variety of open-source compatible business approaches have gained prominence in recent years ; notable examples include dual licensing, software as a service, not charging for the software but for services, freemium, donation-based funding, crowdfunding, and crowdsourcing.

There are several different types of business models for making profit using open-source software or funding the creation.

Another possibility is offering open-source software in source code form only, while providing executable binaries to paying customers only, offering the commercial service of compiling and packaging of the software.

Providing cloud computing services or software as a service without the release of the open-source software itself, neither in binary nor in source form, conforms with most open-source licenses.

Another variant of the approach above, mainly use for data-intensive, data-centric software programs, is the keeping of all versions of the software under a free and open source software license, but refraining from providing update scripts from a n to an n+1 version.

If a software product uses only own software and open-source software under a permissive free software licence, a company can re-license the resulting software product under a proprietary license and sell the product without the source code or software freedoms.

2016 the MariaDB Corporation created for business compatible "Delayed open-sourcing" the source-available Business source license which automatically relicenses after three years to the FOSS GPL. This approach guarantees licensees

that they have source code access, are not locked into a closed platform, or suffer from planned obsolescence, while for the software develop era time-limited exclusive commercialization is possible.

An extreme variant of "Delayed open-sourcing" is a business practice popularized by id Software and 3D Realms, which released several software products under a free software license after a long proprietary commercialization time period and the return of investment was achieved.

The motivation of companies following this practice of releasing the source code when a software reaches the commercial end-of-life, is to prevent that their software becomes unsupported Abandonware or even get lost due to digital obsolescence.

Using open source appeals to software developers for three main reasons: lower no cost, access to source code they can tailor themselves, and a shared community that ensures a generally robust code base, with quick fixes for new issues.

The Freemium model as the Intentional Economy.

True sustainability is intentional, people who seek the truth almost always become a recluse, some however do return to the mainstream to help create a welfare state and are exceptional in their righteousness. The Freemium model reflects on this intentional economy , taking the flavor of an intentional symbiosis economy, with an intentional economy of open designs and

technology and a symbiosis one of Pro, a dual license. Intellectual property is always safeguarded by the dual licensing, all open technology is always licensed under a license agreement that protects the intellectual property of the designer.

Freemium and 3DP.

Freemium with it's dual licensing is directly amenable to the 3DP economy, open designs are directly amenable to being produced and customizable in 3DP.

Outdating Money with the Freemium Model.

The paradigm of 3D printing , is the technology of space sciences, directly amenable to extra planetary exploration. In the future, as indicated in science fiction, such as Star Trek, money is outdated. Replicators use dilithium to make any design, while this technology is not yet available, 3DP with graphene and PLA and a host of other materials is available. In the context of intentional living, using a synergy economy it is thus possible to outdated money for the intentional economy alone.

Intentional Synergy Economy:

1. Market Diffusion with Goodwill in the Mainstream economy.

Goodwill, with the freebie donations, works towards the market diffusion of an innovation or new product. This helps in a return of a quantisation of market forces, that help in the sale and marketing of the product.

Let us call this factor MF_i , in the existence of a vector of MF_i for $i = 1$ to n .

There are two networks to the dual licensing, one the open OP and the other Pro, PR. We can mathematically model the diffusion of the product in both OP and PR with the feedback of MF_i to PR.

2. Marketing by word of mouth, through Goodwill.

Word of mouth, leads directly to this factor MF_i , which can quantize the effect on the diffusion of the product in PR, which is the sales. The effectiveness of the diffusion, quantised the success rate of the product. It has a metric in:

1. Life cycle of the product.
2. Volume of sales.

The BIGI Model, Freemium model increases market diffusion and Product Marketability.

The BIGI model [5], stands for Brand building (including new product launch), Income generation, Government legislation and Information gathering. The Open-Pro model is a BIGI model.

Brand building is the mechanism of market diffusion in both the pro and open markets. It leads directly to a circular economy in the lifecycle of the product. In a 3DP economy, it directly leads to income production in 3DP and services economy, it has a cascading effect on income generation, with

more the diffusion of the product, more the 3DP network infrastructure, more production and hence more income generation. Market saturation is correlated with the life cycle of the product, with a circular economy and the recycling of the product and hence more income generation. Data mining from data gathered from the PRO and Open networks forms the basis for all decision support. Data lakes from blogs, polls and surveys along with other feedback data helps create a knowledge database on the product which can be mined for marketing strategies and customised advertising.

This mining sculpts government policy too.

An analysis of promotional freebies and subsidies is analyzed in [6] using a few quantitative criteria.

New Story, a non-profit in the 3DP Construction industry.

New Story has used the Vulcan, 3D printer (“ICON Unveils Its New Robotic Home 3D Printer, Vulcan II - 3Dnatives” 2019) to print free low cost homes, in a circular economy to people in natural habitats, throughout the world, their products are freemium and value addition is by the organic nature of the architectures and the printing process and materials. Energy savings make this architecture a low footprint, earth friendly architecture, which is rapid in deployment.

MRE 3DP Food for the space age.

NASA in the recent past created a challenge for the 3D printing of pizzas for astronaut consumption. (“ICON Unveils Its New Robotic Home 3D Printer, Vulcan II - 3Dnatives” 2019, “Website” n.d.) While Freemium MRE food is not yet widely distributed, the author personally quotes Nature Valley Breakfast Cereal Bars as an example. These cereal bars, create a subconscious intent to purchase and increase brand equity, a form of customer based equity, thus freemium models lead to increased customer equity, brand image building and increased revenues from intent to purchase, the highest returns from small budget marketing strategies, as compared to media or internet based marketing.

SaaS services, the Freemium Model.

Leading SaaS providers, like Azure, Google and AWS,(Naseer and Nazar 2016; Zou, Wang, and Lin 2010) provide Freemium cloud based services for a limited time, this helps increase cloud based traffic, use of virtual machines and leads to better content, directly increasing subscriptions, leading to brand equity and improved profits.

SaaS and IAC have become synonymous with distributed computing, making serverless architecture a mainstream reality, much like search engines and SEO services which are Freemium, the future of computing may be SaaS based e-paper, improving literacy and e-learning. With

technical education, also being cloud based and in the freemium sector, most services and basic commodities, would likely be in the Freemium sector leading to a better implementation of a Welfare State.

Conclusions.

This paper delineates the power of Freemium services in an intent, micro-economic and an intentional market apart from traditional internationalization and macro economics. Improved product and innovation diffusion, by word of mouth alone is proven and so is the cost efficiency compared to other marketing approaches. Case studies of food, SaaS and housing Freemium services have been provided, proving the viability of this approach.

In a future publication, we will describe mathematical models of product diffusion in social networks using non-uniform lattice models and prove the efficacy of Freemium services in disruptive market creation.

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