Staying without Power A Case Study of the Drupal Content Management System

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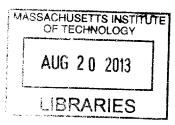
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I run the knowledge that I learned from M.I.T the most wisdom school of the world.

It works

AMAZING!

I would also like to thank Michael, Imran and Pat who staying with me when I am without power.

Love in M.I.T; Love in USA

爱在美国,爱在理工

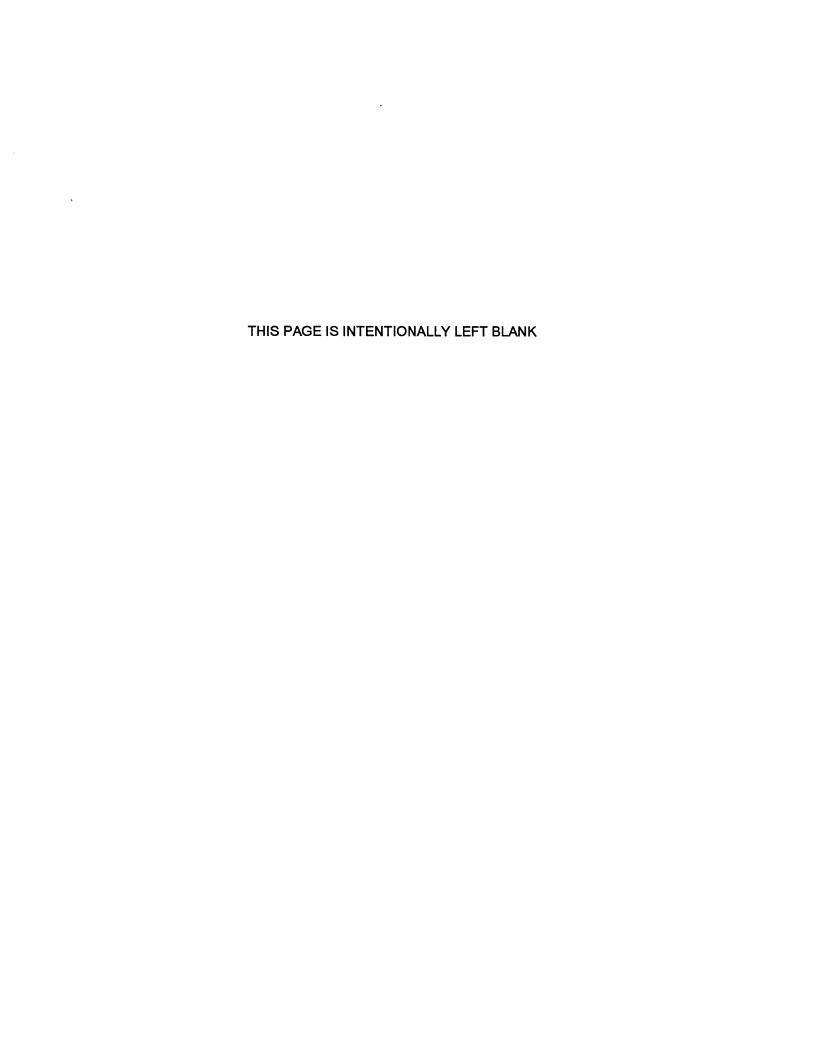
感谢所有支持我的人们:我的家人,我的教授,我的团队!

虽然我离开心爱的麻省理工的时候,身无分文,窘迫不堪,但麻省理工让我充满了智慧。

我有毕业但穷困潦倒的无奈,但更有闯下一番天地的激情。

我要成为一个成功的企业家,我要成为一个推动中国民主的革命家。

我要回馈麻省理工,我要改变世界!



Staying without Power

By

Qi Zhang

Submitted to the System Design and Management Program in Partial Fulfillment of the Requirements for the degree of

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ABSTRACT

This main focus of this thesis is not to describe the inner workings of the Ecosystem or software; it is to help young entrepreneurs with limited resources to not just survive, but *thrive* in a competitive business environment.

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Introduction

This main focus of this thesis is not to describe the inner workings of the Ecosystem or software; it is to help young entrepreneurs with limited resources to not just survive, but *thrive* in a competitive business environment. The media's portrayal of the general sentiment among businessmen is that the knowledge gained from business school cannot help them in forming a start-up company. In addition, public opinion is often doubtful of the value of business school. Some people also feel that business strategy books cannot help them when they face harsh competition.

In fact, many bestsellers often convey great truths. The trouble is that readers read the wrong books. A Penguin from the South Pole is reading a book which teaches a Polar Bear how to survive in the harsh environment of the North Pole. Indeed, both the North Pole and South Pole are cold and have extreme conditions for survival. Unfortunately, the survival skills of the Polar Bear cannot help the Penguin. Although both of them have to live in a harsh environment where food is scarce and bad weather is plenty, the Penguin is not as strong and big as the Polar Bear. Furthermore, the North Pole is actually frozen sea while the South Pole is continental. They may look alike on the surface but are totally different.

Thus, your business fails not because the strategy itself is wrong but because you use the strategy in the wrong context. It is not difficult to understand or utilize the various popular business strategies but hard to understand "Who am !?" and "Where am !?"

Most start-up founders take Bill Gates and Steve Jobs as their examples and want their own businesses to experience the same success as Microsoft and Apple. But they neglect the important truth that Bill Gates and Steve Jobs are Outliers. They had the unique combination of having the right skills, in the right place at the right time. Sohu's (The Chinese Yahoo) CEO Zhang, an MIT PhD, recommended that we read the New York Times Best Seller, "Outliers". In essence, the book tells us that the heroes are outliers and they live in the right time and right place and have special backgrounds. Both Gates and Jobs were born in the United States, The Rome of the 21st century. Both of them stood at the dawn of the Information Technology revolution. Bill's high school is a private school which provided opportunities for him to explore computing and practice hours on a computer which was purchased

¹ http://www.forbes.com/sites/jjcolao/2012/01/12/eight-reasons-startup-incubators-are-better-than-business-school/2/ Eight Reasons Startup Incubators Are Better than Business school.

² This blog entry support business school education, but also presents an opposing view at the beginning of the blog entry http://strategyprofs.wordpress.com/2011/11/02/can-entrepreneurship-be-taught/

³ I have heard this opinion shared by several of my several friends but I do not agree with it.

Malcolm Gladwell, 2008, Outliers, NY: Little, Brown and Company; 1 edition (November 18, 2008)

through fundraising efforts of the mothers of his school. That was a very unique environment for a high school student considering that only four universities in the United States had computers at that time.

Jobs did not come from a wealthy family, but he did have an adoptive father who was a mechanic and taught him how to make things and machines in the garage. They also happened to live in Silicon Valley. Gates's mother used her wealth to help her son to acquire the advanced programming skills at an early age that enabled him to later create the Windows operating system. Jobs's adoptive father taught him machine-making skills that led to the making of the Apple computer. They had strong support from their respective families to pursue their passion for computers at a time where information technology was on the rise. The triple factors of timing, place, and skills all made it possible for them to be who they are today.

Bill Gates and Steve Jobs are what I would call Polar Bears: strong and powerful. Everyone wants to be a Polar Bear, especially the founders of start-up companies. These entrepreneurs are brave and the adrenaline rush from creating a start-up will hinder them from understanding or admitting that they are not Polar Bears but small, fat and slow-moving Penguins.

Thus, if you do not have the three factors of having been born in United States (right place), during the dawn of the IT revolution (right time) with an enriched background (such as wealth or family or school support), then you are not an outlier and nor a Polar Bear, but admittedly, only a small Penguin.

Then what?

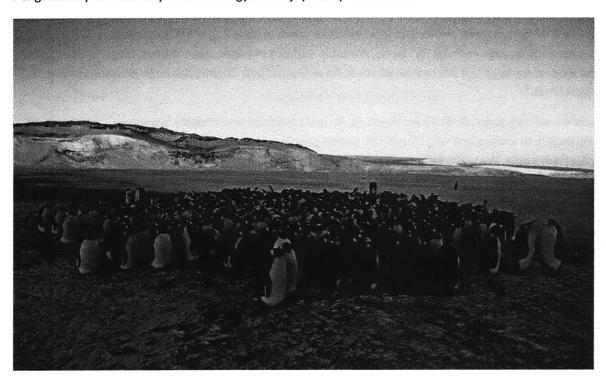
Forget about the dream of founding a successful start-up, face reality and settle for being an ordinary salaried man?

Who AM I?

It is not my aim to dash the start-up hopes of dreamers. I am also a dreamer.

We have completed the important first step: Realize and admit we are Penguins if we do not have all of the three factors. Let us, then, forget Bill Gates and Steve Jobs, the Polar Bears, and close the Polar Bear Survivor Manual.

How then do Penguins survive in tough situations? It is simple. Hundreds and thousands of Penguins always stay together closely just as you always see on Discovery channel. When the weather is colder, Penguins stay more closely to save energy and enjoy safety in numbers.



Both Drupal and Joomla are Web CMS System. Web CMS means

CMS means Web Content Management System or A web content management system (web CMS) which is a bundled or stand-alone application used to create, manage, store, and deploy content on Web pages. Web content includes text and embedded graphics, photos, video, audio, and code (e.g., for applications) that renders other content or interacts with the user. A web CMS may also catalog or index content, select or assemble content at runtime, or deliver content to specific visitors in a personalized way, such as in different languages.⁵

Drupal (/'dru:pəl/) is a free and open-source content management system (CMS) and content management framework (CMF) written in PHP and distributed under the GNU General Public License. It is used as a back-end system for at least 1.5% ⁶ of all websites worldwide ranging from personal blogs to

⁵ http://en.wikipedia.org/wiki/Content management system Wikipedia CMS introduction

⁶ W3Techs (2011-07-15),"Usage of content management systems for websites", Retrieved 2011-07-15.

corporate, political, and government sites including whitehouse.gov and data.gov.uk. It is also used for knowledge management and business collaboration.⁷

Joomla is an another free and open source content management framework (CMF) for publishing content on the World Wide Web and intranets and a Model–View–Controller (MVC) Web application framework that can also be used independently.

Joomla is written in PHP, uses object-oriented programming (OOP) techniques (since version 1.6) and software design patterns, stores data in a MySQL or (since version 2.5) MS SQL database, and includes features such as page caching, RSS feeds, printable versions of pages, news flashes, blogs, polls, search, and support for language internationalization. As of March 2012, Joomla has been downloaded over 30 million times.⁸

Here we will talk about Drupal's architecture, Drupal's Modules and Drupal's Ecosystem. This thesis will help people to understand why Drupal can enable people and companies to succeed and how Drupal's Ecosystem works. We will take an in-depth look at the modules and what kinds of people and companies are using and supporting the Ecosystem.

Ultimately, this will help us to draw conclusions about how we can survive in a tough competitive business environment with limited resources and power. Hence, the thesis title of "Staying without Power". Besides the Drupal system, we will also study the Joomla system - a well-known module based open source CMS system, and one of Drupal's main competitors. Compared to the Drupal's totally free module system, the Joomla allows the module developers to charge license fees. Hence, there are lots of commercial modules and free modules that are accompanied with the Professional versions that actively run on this platform. Some people think that commercial license modules betray the ideals of open source. Moreover, some leaders of open source communities, including the founder of Drupal, think that the commercial module will block the development of Joomla. Is this true? This research will provide answers.

This research is mainly conducted by using the data available on the electronic web as it is difficult to conduct interviews with key personnel involved in Drupal and Joomla who are spread all over the world. From my research, I have distilled five essential principles. It is my hope these principles can help entrepreneurs to understand how successful open source projects work and make profit, and how to grow their own start-up companies or projects using good strategies modeled after the open source projects mentioned here. Through this, entrepreneurs can hope that their start-up companies, like the various successful open source projects, can stay without power while facing limited resources. To test the validity of these principles I have found, I decided to implement my own project and publicize details of implementing and expanding the project. This personal case study can be found in the appendix of the thesis.

⁷ http://en.wikipedia.org/wiki/Drupal

⁸ http://en.wikipedia.org/wiki/Joomla

The principles I have gleaned from the research

- 1 Gather the penguins in rich countries (Section: Drupal People)
- 2 The passion of developers cannot last long without revenue and profit (Section: Drupal People). The Penguins must make profit in either in the low-end (Joomla Commercial Module) or high end (Drupal Enterprise level Customers) market. The profits will not be distributed evenly to whole communities if these communities forbid the presence of commercial modules and try to maintain the illusion that open source software is free.
- 3 The real Penguins are not the leaders of the community but the companies created by the leaders (Section: Drupal Companies)
- 4 Founders must try to realize the importance of backend or tool modules by themselves. The normal module developers are more sensitive to the fashion, new trends and current themes. (Section: Drupal Modules)
- 5 The commercial modules will not be in conflict with the non-commercial modules or corrupt the ecosystem of open source communities. (Section: Joomla)

The structure of this thesis

Part 0 is an introduction of Drupal. Section A focuses on the module based system of Drupal and the evolving history of the Drupal community. In Section B, we will explore the architecture of Drupal by introducing Drupal's important concepts and terms including Core, Themes, Nodes, Fields, Blocks and the Modules. The Drupal community and its members' financial pressure will be discussed in Section C, which is foundational to understand one of the principles in this research.

Part 1 focuses on the Modules. In Section A, I will explore which are the most popular modules that are installed over 100K websites. In Section B, the distribution of the modules which are used over 1k websites is highlighted. I will analyze them based on their functions including Back-end, 3rd& application, Decent, Front-end and UserAdmin. I will also introduce **Principle 4**: Founders must try to realize the importance of backend or tool modules by themselves. The normal module developers are more sensitive to the fashion, new trends and current themes.

Part 2 introduces "Principle 1 Gather the Penguins in Rich Countries"

A study on the profiles of the developers – Who supports the modules? My research shows that it is difficult to retain the low-income engineer in the community for long while requiring him to constantly contribute free codes to the project. This will be evident after taking an in-depth look at who are the real leaders in the communities and who supports the Drupal system and its modules. I will explore the background of the leaders and show how they are distributed based on their country of residence. One

can conclude from the data that the wealth of the country of residence is a great determiner of the distribution of leaders in the world.

Part 3 introduces "Principle 2: The Passion of developers cannot last long without revenue and profit"

The people from rich contries can continue to work on your open source project for a longer time than the people from low income countries. While free labor can help your project move ahead, it is not enough to help you achieve success. I will analyze the factors that motivate the leaders to continully contribute to the Drupal "without pay." This will be shown through my personal experience shown in the case study that without profit and return , no project can last long.

Part 4 introduces Principle 3: the real Penguins are not the leaders but the companies created by the leaders. I will provide an in-depth analysis of the the companies behind the leaders who continully contribute to the Drupal community.

Part 5 introuduces Principle 5: The commercial modules will not be in conflict with the non-commercial modules or corrupt the eco-system of Open source communities. The new player cannot have the same opportunities to win big contracts and achieve the level of reputation enjoyed by the founders of the system. The commercial modules enable these leaders to finance their lifestyles, personal research and study. Dries, the founder of Drupal criticized his competitor Joomla that the commercial modules of the Joomla community will hinder the future of Joomla. The study of Principle 5 will lead to an examination of whether Dries is right.

Conclusion: A conclusion for Parts 1 to 5.

Appendix: By analyzing an existing successful model, we can create a framework to help pioneers to make a decision when they have limited resource. But it is still too abstract. Furthermore, the data available online and other documentation may not always disclose all of the important factors and the details. This is one of the main reasons why I tried to run a project to make sure if I can stay without power. Although I could not finish the project in 3 months, lots of things I experienced give me more information and experience than this research of the Drupal ecosystem. The Appendix, based on the real experience, is different from the other parts which are based on publicly available data. The Drupal research mainly shows how to distribute the profit among the members or member organizations and keep the project growing. The case study shows how to survive before gaining profit. It is an early stage which everyone must go through.

Research methods

Part1 -Part5:

I explore all salient factors relating to the online communities of Drupal and Joomla. After gathering the raw data concerning the Drupal and Joomla community, I input the data onto Microsoft Excel or draft the distribution graphs based on the data. The data is calculated painstakingly one by one and is based on the information of each module. I study the detailed information of each module to uncover what is

behind the development of the modules. It is time consuming but very valuable. It is more complex than we normal thought. There is a big profit alliance behind the modules.

Appendix:

I recorded my experience of implementing a project similar to forming a start-up company. I wrote down lots of thoughts and came up with conclusions from what I had learned from working on the project. I also interviewed Mike Li, my MIT friend who launched a solar company. I also organized our experiences and outlined our journeys through our projects.

Part 1: The Modules

The modules have helped Drupal to grow quickly, now accumulating over ten thousand modules and over 17 thousand developers ⁹– a truly spectacular result compared to Google who has only 9,508 engineers¹⁰. The difference is Drupal pays nothing to engineers while Google paid \$2.8 billion,\$2.8 billion, and \$3.8 billion in 2008,2009 and 2010, respectively, which included stock-based compensation expense of \$732 million, \$725 million, and \$861 million, respectively. ¹¹ The cost difference between Drupal and Google for employee salary was 0 dollar versus 1 billion per year. Wikipedia ¹² shows that at least 1.5% of all websites worldwide are using the Drupal as backend. Based on the scale of Drupal, we can see Drupal is staying without power.

To configure the Ecosystem of Drupal and understand how Drupal stays without power, let us take an indepth look at the modules and developers and companies behind the modules.

Let us figure out <u>what kinds Modules are most popular</u> first. I selected ten thousand modules which have been installed over thousands of websites to show the site owner user's preference. Here are the definitions of 3 important terms used in this thesis:

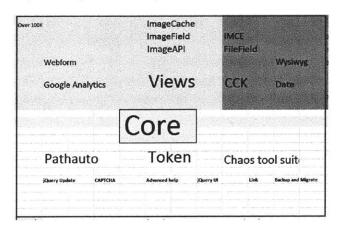
Developers are those engineers who develop the modules.

Site owners are users who use the Drupal based website to supply service to end users.

End Users are the normal people who surf the websites.

Section A: The most popular modules are installed over 100K websites.

Figure 1: A distribution map showing the most important modules



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⁹ http://drupal.org/

¹⁰ Google 2010 10K Page 7 Culture and Employees

¹¹ Google 2010 10K Page 6 Research Section

¹² http://en.wikipedia.org/wiki/Drupal

¹³ The data on module usage is based on http://drupal.org/project/usage

The Gray Area is for third party service and application modules which combine the Drupal site with the third party sites or popular application.

The Pink Area is for the decent look of Drupal site. It includes the image, slider and menu theme.

The Blue Area is for the front-end tools. It includes tag, field content setting and so on.

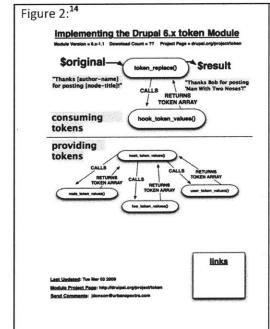
The White Area is for the back-end tools. It mainly services for the module programmers and developers.

In the graph the more popular the module is, the font size of its name is bigger.

The Core module is the biggest module whose reported installation is over 676K.

2nd Views is located in the pink area. The "views" Module provides a flexible method for Drupal site designers to control how lists and tables of content are presented. Traditionally Drupal has hard-coded most of this, particularly in how taxonomy and tracker lists are formatted. It is a smart query builder. You do not need to know the complicated SQL query and PHP language ability to build the query to form the table and list by the View Module. It is not only for the list and table. Using its smart query function you also can form the reports and summaries without knowledge of any programinmg language.

3rdToken is located in the white area. It leaves a blank space for the setting sentence and slogan. Drupal will automatically put the words after users execute the query.



4th Pathauto automatically generated URL/path aliases for various kinds of content like nodes, taxonomy, terms, users and so on. Users do not need to specify the path alias by hand. Normally the Drupal site will default set the content a URL address like www.mit.com/node/001. For anything content related object is node, the default address always will bewww.mit.com/node/number. It is really difficult to remember this. The Pathauto module will help users to set the rule which will form decent URL addresses. You can set your rules by this module. For example you can set the user account page to user and the number to user name then the link of user profile page will change to www.mit.com/user/username.

5th Content Construction Kit: The module helps users to build or edit nodes by adding fields based on the rule he sets.

9

http://drupal.org/node/397940

6th Chaos tool suite (ctools) It is a bunch of APIs and Tools to help developers develop their sites more easily. It concludes the following tools: plugins, Exportable, Ajax responder, Form Tools, Contexts, Modal Dialog, Content, Form Wizard and CSS tools. It is a backend module.

7th Administration menu: It is a menu module to help developer and new users to save time. You will find it is very easy to use. Besides the most basic functions, it helps user to quickly access to admin resource of Drupal site. Furthermore, it is independent to Themes.

8th ImageAPi: It is an API to service other Image modules.

9th Date: The module contains a flexible data/time type and a Date API that other modules can use.

10th Wysiwyg: It is a client-side editors to edit content.

11th FileField: It provides a universal file upload field for CCK.

12th IMCE: It is an image/file uploader and browser that supports personal directories and quota.

13th ImageCache: It is a part of core module now and responsible for the image processing.

14th Google Analytics: It is the third part service module for Google and responsible for the web statistics tracking system.

15th imageField: ImageField provides an image upload field for CCK.

16th Webform: It is a module to make surveys in Drupal.

17th Advanced help: The module helps developers to store the help file outside of the module.

18th Captcha: It is a spam-block module which will be embedded into the form of page. Users must correctly retype the words or numbers randomly created by Captcha module before they submit the form.

19th Link: The module can help users to add links to any content type and profiles.

20th Backup and Migrate: It is a tool module to back up your Drupal site's database and help you move it to another site.

21th JQuery UI: It is a Javascript Utilities. It is a modified Jquery UI effects library based module. It can help developers to improve their code effects.

The most popular 21 modules stay closely with the core module. Along with the core, they service for the other modules and the whole Drupal site. I call them Guard group which like body guard of Core module.

In the Guard group whose member has been installed in over 100k sites.

The function based distribution:

The Grey zone(third part and application tool) has 2 members

The pink zone(decent tool) has 5 members,

The Blue zone (front-end tool) has 5 members,

The White zone (back-end tool) has 9 members.

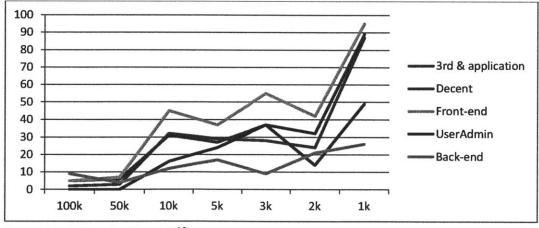
Section B: The distribution of hot modules

After exploring the most important modules which work as the bodyguards of Core modules, let us take a look at the hot modules which are installed over 1k sites.

Figure 3¹⁵: The distribution of hot modules used over 1k sites.

Zone	third part and application	decent tool	front-end tool	User admin, Author	back-end tool
Over 100k	2	5	5	0	9
Over 50k	3	6	7	0	4
Over 10k	32	31	45	16	12
Over 5k	28	28	37	24	17
Over 3k	28	37	55	37	9
Over 2k	24	32	42	14	21
Over 1k	87	89	95	49	26
SUM	204	228	286	140	98

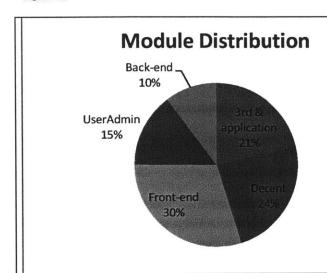
Figure 4



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 $^{^{15}}$ The module usage data is based on $\underline{\text{http://drupal.org/project/usage}}$ from which I counted and categorized the data.

Figure 5



We can get some important clues based on the data of 1000 modules which are installed over 1000 sites.

1 The back-end only occupies 10%. Most of the Module developers concentrate on the front-end (30%) Decent (24%) and 3rd application (21%).

2 Over half the Drupal-based websites are small size websites which do not need user admin and authority functions. From this we see that zero user admin and authority function modules are installed over 500k and 300k websites as shown in Figure 3.

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To understand more about the modules we need to take an in-depth look at the Modules distribution.

Let us start from the 3rd parts application zone:

The definitions of the sub-Function group at 3rd parts application function zone:

Social refers to Social Network applications

3rd refers to the third part applications

Rating refers to the rating function applications

Spam refers to Spam defense applications

E-Commerce refers to E commercial applications

Community refers to online community applications

<u>"329"</u> indicates that the module is ranked as the 329th most installed module in over ten thousands modules.

Over 5k indicates that all the modules of the area are installed by over five thousand sites.

¹⁶ The module usage data is based on http://drupal.org/project/usage

¹⁷ The module usage data is based on http://drupal.org/project/usage

Figure 6¹⁸ 3rd parts application function zone (Grey area):

Over5K				330-Acquia
	329-Twitter Pull-social-5k			317-Simple
	324-PHPMailer-3rd-5k	328-iCal feed parser-Calen	dar-5k	302-IE Uni
	315-Facebook Like Button-social-5k	320-Piwik Web analytics-3	d-5k	284-Block
	312-Plus 1-Rating-5k	314-Views Slideshow: Dyn	amic Display Block-5k	281-JQuen
	306-CAPTCHA Pack-Spam-5k	310-User Relationships-So	cial-5k	267-Plupic
	298- Views Charts-3rd-5k	304-Google Plus One +1-So	257-Specia	
	292-Ubercart Discount Coupons-E-Commerce	295-Drupal For Firebug-3rd	239-Zero F	
	277-MailChimp-Mail-6k	278-OpenCalais-Semantic	234-Media	
	273-Terms of Use-EC-6k	274-ShareThis-Scoial-6k		230- PNG
	269-Drupal Commerce-EC-6k	271-Mail System-Mail-6k		216-View1
	259-Forward-CommunityMail-6k	264-userpoints-Community	⊬ 6k	207-Admir
	250-Resource Description Framework-RDF-6k	253-Follow-Social-6k		197-CSS Ir
	229-Signup-community-7k	247-247-HTML Mail-7k		193-Views
	206-Advertisement-9k	208-Contact Forms-Mail-8k		191-Dragg
	188-Facebook social plugins integration-Socia	192-AdSense-Comercerce-)k	
	Over10k			175-Bette
				171-Acqui
	187-Custom Search-Search-	10k		166-Sema
	183-LDAP integration-3d-10			162-Block
	180-Alter profile page-Com	munity-10k		156-Imag
	176-Google Chart API-3d-10			145-Dank
	173-Comment notify-social			143-Meni
	163-Services-web service-1:	l 170-Event-event-11k		124-Imag
				120-IMCE
	106-Organic groups-Commu			119-Imag
	90-Privatemsg-community-2			93-Views
	87-Flag-rating-24K	89-YouTube-3d-2		92-SWF To
	63-Fivestar-rating-36k	64-Simplenews-e		89-DHTMI
	59-GMap Module-3d-37k	66-Mollom-spam		88-Views
	57-Ubercart-commercial,3d			85-Custon
	55-Location-3d-40k	81- reCAPTCHA-Sp	oam-25k	84- Insert
		Over50k		
	110-Author Pane-Communit	γ-19k		
	111-Messaging-Mail-19k			
	113-Advanced Forum-Comm	iunity-19k	42-Voting API-Rating	g-53K
	114-AddThis-Social-19k		39-Calendar-60k	
	117-SMTP Authentication St		26-XML sitemap-3d-	9UK
	121-AddToAny Share/Bookin	nark Button-S,M-17k	Over 100K	
	128-Notifications-Mail-16k			
	130-Twitter-Social-16k			
	136-Invite-Community-15k		Webfor	m .
	139-Service links-Social-15	.	Google	Analytics
	155-SpamSpan filter-12K-sp	am		

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To dissect the example convention seen above: 111-Messaging-Mail-19k, you will have the following:

111 is the rank in over ten thousand modules based on the number of sites which reported they have installed the module.

Messaging is the module name

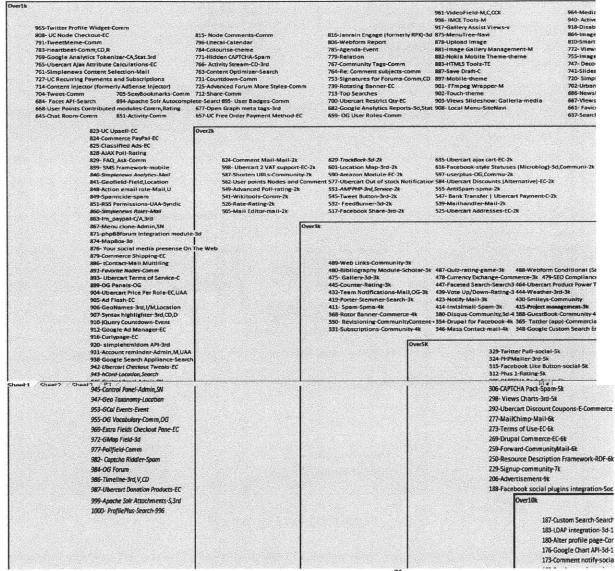
¹⁸ The module usage data is based on http://drupal.org/project/usage

¹⁹ The module usage data is based on http://drupal.org/project/usage

Mail is the specific function group which shows the Messaging mail module belongs to the Mail group.

19k is the number of websites which have installed the module.

Figure 7²⁰



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²⁰ The module usage data is based on http://drupal.org/project/usage

²¹ The module usage data is based on http://drupal.org/project/usage

Figure 8 Mainly specific function based statistics in pink zone (3rd part application)

	Social Rating	3r part	spam	Mail	commercial	Search	Calendar
	EventCommunity						
over 100k	1	1	0	0	0	0	0
over 50k	2	1	0	0	0	0	1
over 10k	11	4	3	5	1	1	1
over 5k	11	3	1	5	5	0	0
over 3k	9	4	2	3	4	3	0
over 2k	7	6	1	3	7	0	0
over 1k	29	14	3	5	17	8	1
SUM	70	33	10	21	34	12	3

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The Distribution shows the ranks of different groups.

No 1 the social, rating and event-70 modules

No 2 E-commercial -34 modules

No 3 third-part modules - 33 modules

No 4 mail-21 modules

No 5 search-12 modules

No 6 spam-10 modules

It shows the Drupal modules help Drupal to stay ahead of current trends on the Internet. They follow the most popular spots of the Internet such as Facebook and Twitter, leading social networks. The E-commercial is ranked as No2 ²³shows that the developer senses the website owners' needs and actively helps them to make profit. They are also smart to use the third-party service and the Drupal community takes Spam defense seriously.

The sub-function area of Decent Module Zone (Pink) consists of:

Theme refers to the Theme function group

SiteNavi refers to the Site Navigation group

Media refers to the media function group

²² The module usage data is based on http://drupal.org/project/usage

²³ Based on the data of Figure 8

ThemEn refers to the Theme enhancement group

<u>View</u> refers to the View function group.

The sub-function area of Front-end Module Zone (Blue) consists of:

File refers to the file function area

<u>C</u>refers to the content function area

Editor refers to the editor function area

CCK refers to the Content Construction Kit group

<u>Tags</u> refers to the Tag function group;

Mutilingual refers to the Multiple language function group

Figure 9 The graph of Decent Module Zone and Front-end Module Zone (Over 5k)

330-Acquia State	Lthama-Sk	314-Views Slideshow: I	Ownamic Disni Owersk		
317-SimpleMent		323-Media Gallery-med			
		311-Views Nivo Slider-		Commence of the Commence of th	
284-Block Thems		291-Mobile Tools-Mobi	Section Strategies (Section 1)	321-Colorpicker-CCk-5k	325-Linkit-C,PathMang,Editor-5k
281-JQuery menu		282-Corolla-theme-5k	305-IMCE Crop-File-5k	312-Views Calc-views-5k	316-Node Relationships-C-5k
	regration-media-6k	270-Flowplayer API-Me	dia-6k 299-Custom Pagers-C-5k	301-CCK Fieldgroup Tabs-C-	303-WYSIWYG Filter-File-5k
257-Special men	u items module-6k	265-Corporate Clean-th	eme-6k 293-Meta tags-tags-5k	294-iTweak Upload-File-5k	296-Web File Manager-file-5k
239-Zero Point-ti	heme-7k	256-Conditional Styles	heets-ThemEn-288-Views RSS-C,V-5k	289-CCK Blocks-C-5K	290-Galleria-C-5k
234-Media: Vime	eo-media-7k	237-Acquia Prosper-the	me-7k 280-Taxonomy Breadcru	mb-1283-Backup and Migrate Fil	285-Translation Overview-Mutilinguage-Sk
230- PNG Fix-The	meEnhance-7k	231-Node form column:	s-ThemeEn-7k 240-Prepopulate-C-7k	268-Weight-C-6k	275-Custom Page-C-6k
216-Viewfield-V		224-Ubercart Views-EC,		lie-7 238- ImageField Tokens-C-7	
207-Administrat	ion theme-theme-8k	215-BlueMasters-Them	HANDERS HER HER THE STATE OF TH		
197-CSS Injector-	Theme-9k	204-Shadowbox-Media	50/24/37/36/39/36/59/36/36/36/36/36/36/36/36/36/36/36/36/36/		218-Gallery formatter-CCK-8k
193-Views Group		196-Pixture Reloaded-t	\$54 HARRIS (\$100 E) \$400 E \$400 E \$100 E \$100 E		205-Insert View C-9k
191-DraggableV	iews-Views-9k	192-MimeDetect-Media	a-9k 193-8UEditor-Editor-9k	195-Texonomy Image-C-9k	200-Localization client-Multilingual-9k
175-Better Expos	sed Filters-view-10k		Over10k		
171-Acquia Mari	na-Theme-11k	172-Omega-Theme-11k			
166-Semantic Vi		168-Rubik-Theme for a	dmin-11k		
162-Block Class-		164-Video-media-11k			
	Crop-Media-12K	157-Tao-theme-12k		c-10) 185-Address Field-Field-10	
145-Daniand-theme-14k 148-AdaptiveTheme-Theme-13k		FEX.000 NEX.000 NEX.00	1k 174-Webform Validation-C		
143-Menu Trails		144-Gallery Assist-Med			161-Image Fupload-CCK-17K C-13k 153-FeedAPI-12k-Content
	ze Filter-Media-17k	138-Front Page-15k	33833344463357466574466474637	C-14 150-Dynamic display block	C-13k D5-reedAri-12k-Content
120-IMCE Mkdir-		123-Marinelli-Theme-1	AND DESCRIPTION OF THE PROPERTY OF THE PROPERT		79-Node clone-C-26k
119-Image Assis		116- Superfish-SiteNav	THE REAL PROPERTY AND ADDRESS OF THE PERSON	28k 78-Scheduler-C-26K	tillingual- 82-Taxonomy Manager-Taxonomy-25k
93-Views Bonus 92-SWF Tools-M		103-getID3()-Media-22i 76-Fusion-theme		-35k 70-External Links-C-32k	83-Quick Tabs-C-25K
89-DHTML Menu		72-Taxonomy menu-Sit		56-Better Formats-C-40k	94- References-C-23k
	n Field-Views-24k	71-Skinr-ThemeEnhanc			versions-C 96-FileField Paths-C-23k
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84- Insert-Media	CAUSE CONTRACTOR OF STREET	44-Views Bulk Operation			utilingual 105-Nodequeue-C-21K
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	38-Zen-theme-60)	RESERVED TO SERVED TO SERV			115-jCarausel-C-19k
	33-Views Slidesh	\$1606E0H06X95X5000			125-Field group-C-16k
	30-Image-Meida	344001000000000000000000000000000000000	42-Email Field-50k		126-Node Reference URL Widget-C-16k
	25-Lightbox2-viev		ment-90k 27-CKEditor - WYSIWYG	HTML editor-content-90k	127-String Overrides-Multilingual,Theme-16k
	ImageCache		Over 100K		131-FileField Sources-CCK-16k
	ImageField	IMCE	28-Nodeword	s-tag-80k	132-Node export-C-16k
	ImageAPI	FileField		linect-Content, Path Managemen	133-Views attach C-15k
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Figure 10 The graph of Decent Module Zone (Pink area, Over 1 k) & Front-end Module Zone (Blue Area, Over 1 k)

²⁴ The module usage data is based on http://drupal.org/project/usage

784-Colourise-theme				Over1k			
61-VideoField-M,C,CCK			976-Four Seasons		980-Sweaver-ThEn	990- Fusion Mobile-theme	991-Gordon-theme
36- IMCE Tools-M	940- Active menus-SN		944-Noggin-ThEN		949- litejazz-theme	952-Textimage-Media,ThemEn	973-Dynamic Persistent Menu-JSU, StieNavi
917-Gallery Assist Views-v 918-Disable b 875-MenuTree-Navi 864-ImageMag		944-Noggin-ThEN 918-Disable breadcrumbs-TE 922-Forest Floor-th		theme	924-Amity Island-theme	928-Nitobe-T	933-Wabi-theme
			869- Flickr API-M		870-Magazeen-T	872-Metropolis-theme	873- Views Slideshow Xtra-CD,M,V
78-Upload Image	810-Smart Crop-M		812-Mobile Them		859-Newswire	861- Silde Show CS-Melda	866-Role Theme Switcher-TE
81-Image Gallery Management-M	772- Views Showcase 755-Imagecache Effe		775-Vocabulary In		777-YUI Menu 762-Slideshow Creator-M	778-Pixture-Theme 768-Views UI: Edit Basic Settings	786-Views Stideshow Stider 799-Menu Node Views
882-Nokia Mobile Theme-theme 755-Imagecach 883-HTMLS Toots-TE 747- Deco-T		LIS*M	759-css3pie-them 748- FileField Poi		762-Sildeshow Creator-M 749-Editview-V	754- Smart menus Smart tabs-SN	802- Fast Gallery-M,FM
87-Save Draft-C	741-Slideshow-Medi	ia	742-The Morning		744-MediaElement-M	745-LESS CSS Preprocessor-TE,D	817-AD Novus-theme
97-Mobile-theme	720- Simply Modern 1	Theme	721-Event Views-		728-Gallery Assist ImageCo	at 740-Fusion Accelerator-TM	818-Media; BlipTV-media
901- FFmpeg Wrapper-M	702-Urban Solice-the		710-Waffles-then		715-Views displays-CD	719-VideoJS (HTML5 Video Player)-M	833-Page Theme-theme
902-Touch-theme	686-NewsFlash-then	ne		-Adm,ThemeEnhan	697-Node Images-C,M	696-Journal Crunch-T	835-Arthemia-theme
903-Views Slideshow: Galleria-media	667-Views Display Ta	abs-Views	676-Kanji-theme		679-Content Analysis-EC,C,		836-album photos-media
908- Local Menu-SiteNavi	661- Favicon-		662-Megamenu-S		663-Seven-theme	666- jPlayer-Media 654-Auto Menu-SiteNavi	838-Clean-theme 850- Views Field View-v
	637-Search API-Search	n,view-1k	POS-1M Flaket WO	dule for Drupal-Media	641-Blueprint-theme-1k	donatio meno-siterian	
		07-Imagemenu-		612-Advanced Blog-Comm		kson-theme-2k nu kons-2k	Over2k 636-freelinkin 611- etfinder
		04-Analytic-then 94- PNG Behave		605- Busy-theme-2k 595- ¡Query Media-media		lliant Gallery-Media-2k	602-Plexifield
635-Ubercart ajax cart-EC-2k			ThemeEnhan-2k	568- Taxonomy Views Inte		bmenu Tree-SiteNavi,CD-2k	S85-Upload pa 579-TableField
616-Facebook-style Statuses (Microblog)-3d,0				:565-Views Gallery-Media		nu position-ThemEnhan-2k	
597-userplus-OG,Commu-2k				e 556-Views Cloud-Views-2		ediaFront-Meida-2k	573- Workspa
584-Ubercart Discounts (Alternative)-EC-2k		44- Switchtheme		546- Image Picker-media-		dioField-Media-2k	550-Archive-C- 533-Submittee
555-AntiSpam-spma-2k		40-SimpleViews		542-Views Tabs-CD,views		x and Match-theme-2k Flex-Theme-2k	525-AJAX Come
547- Bank Transfer Ubercart Payment-C-2k 539-Mailhandler-Mail-2k		29- Finder- Sites 24-Yahoo YUI-Ti		534-Media Browser Plus- 527-WYSIWYG image uplo	media-2k 619-011 oad - Inline images for your W		513-Taxoriom
525-Ubercart Addresses-EC-2k			k-ThemEnhan-2k	516-Gallery Assist Lightbo		ws Fluid Grid-CD,views-2k	SDS-Mode displ
							Over3k 463- Flatcomments-C-3k
				486-Media: Flickr-Media-			459 Simple news Template C,Mel 450 Custom Formatters CCC 38, 446 Cumpact Forms C-38.
				481-Theme developer t-3		483-Better Messages-Cont 476-Image Caption-media	ent-3k 433-Taxonomy Super Select [TSS]
487-Quiz-rating-game-3k 488-Webform Co	anditional (Same Page (Conditionals)-3i		459- Audio-media-3k		F,V,Syndicar 467- MP3 Player-Media-3k	420-Translation template extract
478-Currency Exchange-Commerce-3k 479-SEC	O Compliance Checker-	Search-3k		448-Sections-themeEnha	n-3 453- Views PHP Filter-Views	-3k 457-MAYO-tneme-3k	407-Select (or other)-CCX-38
447-Faceted Search-Search3 464-Ubercart Pro	duct Power Tools-Comm			440-Image javascript crop	p-M 441-Views Slideshow: Galler	io-media-3k 443-Andrameda-theme-3k	400-field collection-C-3k
439-Vote Up/Down-Rating-3 444-Weather-3rd				410-Node displays-View-	-3k 413-Node Gallery-Media-3		stem)-them 389 Similar By Terms-C-48
423-Notify-Mail-3k 430-Smileys-Con					Form Settings-ThemEnhan-3		
414-Invisimail-Spam-3k 415-Project mana 380-Disgus-Community,3d-4 388-GuestBook-0	gement-3k			375-Views Hacks-view-4k 371-Omega Tools-themel	395-DesignKit-themenhan	-4k 397-Views Tagadetic-view 375-Blueprint-theme-4k	s-4k 367-Internationalization views-1 361-NodeReferrer-CCK-4k
354-Drupal for Facebook-4k 365- Tattler (app				358-Views Or-Views-4k	362- Block edit-SiteNavi-4		355-Multiselect-COM-4k
346-Mass Contact-mail-4k 348-Google Cust		4k			En-4349-Flash Node-Media-4k		342-Taxonomy hide-Taxonomy-48
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²⁵ The module usage data is based on http://drupal.org/project/usage

Figure 11: A distribution graph showing the distribution of specific functions in the Pink Zone

	Image	Menu	Theme	View	Media
over 100k	3	1	0	0	0
over 50k	0	2	1	2	1
over 10k	0	5	9	8	9
over 5k	0	3	15	5	7
over 3k	1	2	17	7	8
over 2k	1	4	11	5	10
over 1k	3	11	42	10	22
SUM	8	28	95	37	57

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The distribution of specific functions in the Pink Zone

The distribution graph shows the ranks of different groups in the Pink Zone (Decent Area).

- 1 Theme module group: The Theme group (95) is even bigger than Social Group (70) of Grey Zone
- 2 Media Group (57) and Image Group (6) also play an important role in the Decent Area.
- 3 View Group (37) is almost the same weight with the 3rd part (33) and E-Commercial (34) of Grey Zone
- 4 Menu and site Navigation Group (28)

Figure 12: A distribution graph showing the specific functions in the Blue Zone [front-end zone]

	CCK	content	Field	editor	Date	Front Tool	Tag	Mutililuange
over100k	1	0	1	1	1	1	0	0
over50k	0	1	1	2	0	2	0	1
over10k	1	22	2	0	0	2	2	4
over5k	2	19	0	4	0	6	2	2
over3k	15	20	2	5	0	5	6	3
over2k	7	22	2	0	0	8	1	1
over1k	16	58	0	4	0	16	5	5
Sum	42	142	8	16	1	40	16	16

The specific Function Distribution Graph in Blue Zone [front-end zone]- Copyright © 2012 by Zhang Qi²⁷

²⁶ The module usage data is based on http://drupal.org/project/usage

²⁷ The module usage data is based on http://drupal.org/project/usage

1 content related module group (142) is the biggest specific function group by now [theme group (95) and Social Group (70)]

2 CCK [Content Construction Kit] (42) is ranked as number 2 in the blue zone

4 Editor Tag and Multi-langauge groups are all ranked as 4th with 16 modules

3 The front tool group which helps manage files and other functions is ranked as 3rd with the 40 mod

Apparently, Content (Content and CCK-184) is the hottest point of the module maps.

By now we conclude that the Content (184), theme (95) and social-community (70) are the top 3 hot areas.

The sub-function area of User Management & Authority Zone (Red) consists of:

User refers to User tools Group

Adm(A) refers to Administration group

ContentAC refers to Content Administration Control Group

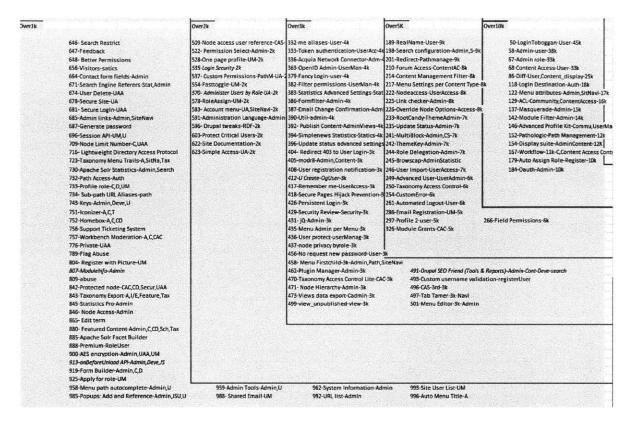
UM refers to User Management Group

<u>UserAccess</u> refers to User Access administration Group

Security refers to Security administration Group

UAA refers to User Authority administration.

Figure 13 Red Zone: User Management & Authority Zone



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Figure 14 White Zone Back-End Zone:

The sub-function area of End Zone (White Zone) consists of:

Utility refers to Utility Group

MutilSite refers to Multiple Site Group

Develop refers to development tools group

Rule refers to rule group

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²⁸ The module usage data is based on http://drupal.org/project/usage

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The module usage data is based on http://drupal.org/project/usage

Part2:

Principle 1 Gather the penguins in Rich Countries (Section: Drupal People)

The Principle:

The founders of start-ups have limited time and money to build a social network for engineers. Further, it is very hard to cut budgets because most of the founders have already tried many possible methods to help them cut costs. So compared to saving money, saving time is the better way to make your business last longer. You cannot do everything by yourself, you have no money to hire people and you have no money to buy code. Thus, the only way is to invite people to join your project and work for free such as Drupal, Joomla and other famous open source projects. But at the beginning stage, lots of newbies will join the community and you must spend much time and energy to attract them to stay in the community and constantly contribute code to the community. Therefore you must know what kinds of people have the potential to be fully committed to the project. My research shows that it is hard to keep the low income engineer to stay in the community for long and constantly contribute free code to the project. To understand it let us take a deep look who supports the Drupal system and its modules.

The developers--- Who support the modules?

In last chapter we have taken a look at the distribution of Drupal modules and got some clues. Now we need to find out who are the real leaders in the communities. In other words who are the Penguins?

The leaders of the communities play the most important role, so I researched the maintainers of the top 100 modules. Why Top 100 modules? The No 1 Module "Core" is installed by 560,000 Sites. The No 100 Module "SEO checklist" is installed by 22,000 sites. The No 1000 Module "Profile Plus" is just installed by around 1,000 sites. So the Top 100 modules are most widely installed and basically form a universal and fully functioning end product. The maintainers of the Top 100 modules are the true leaders and controllers who set the trend of Drupal community.

The convention of graph map: 46-Rob Loach-Acquia-998-9. 46 is the rank based on the commits times.

The definition of Commits: As a module or theme maintainer or contributor, you may be making commits to a Drupal Git repository on a regular basis, both for your own code and changes contributed by others. The number of commits will provide history and credit.*

<u>Rob Loach</u> is the developer name. <u>Acquia</u> is the organization or company the developer is working for. <u>998</u> is the recorder of commits. He alone has submitted code to the Drupal Git repository 998 times by creating new modules designed by himself or updated old modules designed by others. <u>9</u> show the

7

³⁰ http://drupal.org/project/usage/

developer involves 9 modules of the top 100 modules or he maintains the 9 modules of the top 100 modules on the same time. If the name of author is red, then the author would be female.

Let us take a look from the <u>Top 10 leaders</u> first. When you take a look the Canada and America Area, you will find that No2 Earl Miles, No3 Moshe Weizman, No4 Karen Stevenson, No5 Derek Wright, No6 Nathan Haug and No9 Dave Reid are citizens of the United States and No 8 Angel Byron is a citizen of Canada. With the exception of No1 Dries Buytaert(Belgium) and No7 Daniel F.Kudwien(Germany) eight people of the Top 10 are form USA and Canada while the first founder No1 Dries is in Buytaert of EU.

How about <u>Top 10-20</u>? 4 people (No 12 John Albin Wilkins, No14 Arthur Foelsche, No16 Neil Drumm, No19 Brandon Bergren) are US citizens.

No11 Gábor Hojtsy (Hungary), No 13 Gerhard Killesreiter(Germany), No 15 Wolfgang Ziegler(Austria), No 17 Alexander Hass(German) and No 20 Stella Power(Ireland), the 5 people, are based in Europe.

Only No 18 Bruno Massa is in Brazil. So in the Top 20 leaders, 12 people are from North America, 7 people are from EU. No18 Bruno Massa, from Brazil is the only representative of South America.

<u>Even in Top 50</u>: 28 leaders are from North America(33 USA and 6 Canada), 18 Leaders are from EU,2 are from Australia and New Zealand. 1 is from Brazil and 1 is from South Africa.

<u>How about Top 100?</u> If you take an overview of the Leaders distribution Map you will find that all the 98 leaders of Top 100 all come from the North America and EU except for No 26 Adrian who represents South Africa which is the richest country in Africa and No18 Bruno Massa from Brazil.

The most important developers are based in USA. It is thus reasonable that the founder Dires launched his business in USA.

Figure 1: The Statistics: Number of leaders from each nation (Left Table: Green EU Counties)³¹

					1	America	83
America Canada	83 9	Norway Poland	4	China 1 india 2		Germany	12
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		Serbia	1		4	England	10
cuba	1	Switzerlar	5		10000		_
Brazil	3	Portugal	1		5	Canada	9
		Hungry Romania	2 2		6	Sweden	6
		Turkey	ī		7	Netherlands	5
		Spain	3		9376	ACCOMMISSION CHARLES	_
		Ireland	1		7	Switzerland	5
		Germany Belgium	12 5		7	Belgium	5
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		Africa	2	New Zeal: 5	14	Spain	3

Further explorations of each project can be found at http://drupal.org/project/

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So it is very clear that representatives from the USA and the EU Countries play an important role in the community. 83 leaders are in USA, 67 Leaders in EU, 16 people are from Australia and New Zealand and 9 leaders are in Canada. I am doubtful if language is the barrier that prevents more representation from Aisan countries and African countries even though there are only 2 leaders from India. Enginners and students from India are good at English and they have a high level of software engineering skills. Thus, the poor Asian represntation should not be related to the language and education level. I think it should be related to the economic situation of each country. In rural India and China many people subsist below the poverty line. They have little spare time to develop software without any monetary gain while engineers and students can make software just for fun in wealthier countries. If we explore the important projects of Drupal community, we can find that the most committed members are individuals. For example, the 27 committers for the Drupal core, Jhodgdon and Letharion are from the "Organization members of the Drupal Associaction," the others are individual members of the Drupal Association. There is no one from the core Drupal team who works at SUN, IBM or other large IT corporations that can bring in a significant sponsorship for open source projects. Drupal is also not officially supported by any existing corporation. Aquia only recruits the experienced developers who have done individual work on the drupal project. From this, we can conclude that only engineers and students from wealthier countries can create software just for fun. 32

The longest-serving members Jeroen(10 years), Kjartan(5 years), Steven(4 years) and killes@www.drop.org(4 years), Gabor Hojtsy (5 years) and Dries(11 years) are individual members.

Further, the developers from wealthy countries have an easier time to make profit through the free opensource product while it is more difficult in low-income countries. On the internet board I saw the

³² http://drupal.org/node/3060/committers

chat records between the Chinese Joomla developer and the students who want to learn Joomla. The developers make 30 sections of videos to teach people how to use and develop Joomla. Twenty sections of videos are free, but the remaining ten charges 30 dollars. Students, like angry birds, ask why do the Joomla developers want to charge a fee(though the fee is very low) since the Joomla is open source and free. The students criticize the developers for betraying the spirit of open source. But the developers say that their livelihoods are dependent on the revenue from these videos. In fact my question is why do students want to learn the free software? The ridiculous thing is that the students also want to use the free software to make some money if they can. The truth is that both Developers and students are poor .They have no spare time and money to do things for free.

We can also rank the list of countries by GDP (nominal) per capita.

Figure 2: countries by GDP (nominal) per capita³³

	Name	Number	GDP RANK	GDP
1	America	83	15	48,147
2	Germany	12	19	44,558
3	Australia	11	5	66,984
4	England	10	22	39,604
5	Canada	9	10	51,147
6	Sweden	6	8	61,098
7	Netherlands	5	9	51,410
7	Switzerland	5	4	84,983
7	Belgium	5	16	48,110
7	France	5	20	44,401
7	New Zealand	5	23	38,227
12	Norway	4	3	96,591
12	Poland	4	50	13,967
14	Spain	3	26	33,298
14	Brazil	3	53	12,917
16	Hungary	2	45	14,808
16	Romania	2	66	8,666
16	S-Africa	2	71	8,842
16	incle	2	135	1,627
20	Serbia	1	82	6 268
20	Portugal	1	34	22,699
20	Turkey	1	62	10,576
20	Ireland	1	14	48,517
20	Giles	1	87	5,565

The data of GDP (nominal) per capita is based on http://en.wikipedia.org/wiki/List of countries by GDP (nominal) per capita

20	China	1	90	5,184
20	Israel	1	27	32,298
27	Syrian Arab Republic	1	N/A	N/A

Using GDP, it still shows the low income countries are in the bottom. It is clear that it is easier to form open source communities in rich countries. Engineers or students from rich countries have the ability to choose to write code just for fun without a profit motive.

One may postulate that while the list shows rich countres leading at the top and low income countries at the bottom, the GDP rank is not as exactly same as the rank of statistics for leading developers. If we use the PCPI to compare the countries, you will find the two ranking systems are really similar.

Let us consider the list of countries by per capita personal income

Figure 3: Countries ranked by per capita personal income³⁴

	Name	Number	PCPI rank	PCPI(per capita personal income)
1	America	83	1	23,776
2	Germany	12	3	17,069
3	Australia	11	10	13,296
4	England	10	4	16,710
5	Canada	9	N/A	N/A
6	Sweden	6	9	13,746
7	Netherlands	5	7	14,393
7	Switzerland	5	2	17,330
7	Belgium	5	N/A	N/A
7	France	5	6	14,490
7	New Zealand	5	11	12,283
12	Norway	4	N/A	N/A
12	Poland	4	25	4.525
14	Spain	3	N/A	N/A
14	Brazil	3	23	57,052
16	Hungry	2	N/A	N/A
16	Romania	2	N/A	N/A
16	S –Africa	2	N/A	N/A
16	India	2	N/A	N/A
20	Serbia	1	N/A	N/A
20	Portugal	1	N/A	N/A
20	Turkey	1	N/A	N/A
20	Ireland	1	N/A	N/A

³⁴ http://en.wikipedia.org/wiki/List of countries by per capita personal income

20	Cuba	1	N/A	N/A
20	China	1	28	3,029
20	Israel	1	17	11479
27	Syrian Arab Republic	1		

Though the list of countries by per capita personal income does not cover all the countries, it gives us some clues which can confirm my above conclusion that the richer a country is, the more people will develop software just for fun without a profit motive. All the top ten countries are over 10k in international dollars in PCPI while China is 3k. There is no data on India, but it should be lower than that of China.

The webpage http://en.wikipedia.org/wiki/List of countries by per capita personal income (links show more detail) quotes, "This is a list of countries by annual total personal income per capita for various years between 2001 and 2009. Unless otherwise noted, this data was collected by the World Salaries Group based on household budget surveys and converted to international dollars using the International Monetary Fund's implied purchasing power parity rates for each country in 2005. Unless otherwise noted, the income excludes owner-imputed rent and includes non-monetary income of self-supplied goods and services. The US data was taken from the BEA; noncash transfers and imputed rents were taken out."

While the above seems correct, <u>I still have some doubt if</u> the people from rich countries can write code without a profit motive and wonder how long their passion can last without pay.

Let us take a closer look at next part: Principle 2 The Passion of developers cannot last long without profit.

Figure 4: The distribution of the main developers across USA and Canada $^{\rm 35}$

	86	inactive3yea	walkah	James Walker	StatusNet,member	438	L.
	105		katbailey	Katherine Bailey	Affinity Bridge	283	
	164		Steve McKenzie	Steve McKenzie		76	
			1				
					46-Rob Loach-Acquia	-998-9	
					40-Jakob Petsovits-ir	ndividual-1120-1	
					31-Karim Ratib-indiv	idualB-1426-1	
					25-Khalid Baheyeldir	n-individual-1947-1	
					22-Nedjo Rogers-Cho	ocolate Lily-2056	
					8-Angie Byron- Acqu	ia-3580-4	
							Canada
							America
a distribution	er Wolanin-A	A CONTRACTOR OF STREET			2-Earl Miles- iO1 Labs-5911-4		
	Rohaly-Indiv				3-Moshe Weitzman-		
The state of the s	e Ryan-Acqui		1		4-Karen Stevenson-L	and the state of t	<u> </u>
44-Gre	g James Knad	dison-1015-A	cquia		5-Derek Wright-3281	the contract of the contract o	5
47-Rob	ert Douglass-	Acquia-997			6-Nathan Haug-Lulla	bot-4090-8	L
48-Dav	id Norman-in	dividual-986					
51-Bob	Vincent-Con	tract -955	<u> </u>		9-Dave Reid-Palantir	.net-3466-11	-
was the first term of the first terms of the first first terms.	the production of the contract	ntage Labs-94	Street of the second of the se				
entreprise British a residence of the	the transfer of the first property of the property of the second of the	esgame-Acqu	ia-882		12-John Albin Wilkin	s-Palantir.net-3041	-3
	trig01-individ	A SECURITION OF THE PARTY OF TH					-
and a second second second beautiful and	es Gilliland-A				14-Arthur Foelsche-F	Palantir.net-2715-1	ļ
	li Nadareishv		E				
62-Jeff	Eaton-Lullabe	ot-776	ļ		16-Neil Drumm-Drup	al.org-2683-1	
	Miccolis-indi		L				L
		de to Order Sc	oftware-66		19-Brandon Bergren-	Tag1 Consulting-21	59
		dividual -586					
	tandem-indi	and the second section of the second second	k		21-Aaron Winborn-ir	dividual -2105-3	12
			olog,CTO-543-3				
	Plunkett-Zivt				23-Chad Phillips-indi	Charles and the second section of the second section in the second section is section in the second section in the second section in the second section in the second section is section in the second section in the second section in the second section in the second section is section in the second section in the section is section in the section in the section in the section is section in the section in the section in the section is section in the section in the section in the section is section in the section in the section in the section is section in the section in the section in the section is section in the section in the section in the section is section in the section in the section in the section is section in the section in the section in the section is section in the section is section in the section in th	
84 mfb	mark burg	lett	individual	445	24-andrew morton-Z	ivtech-1947-6	

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³⁵ For a more in-depth look at the profile of developers of each module, visit http://drupal.org/project/usage

90 jjeff	Jeff Robbins	Iullabot(Co-four	403	27-Alex Barth-De	evelopment Seed-18	19-2	
92 ankur	Ankur Rishi	ISL Consulting	386				
94 EclipseGo	Kris Vanderwater	Commerce Guys	380	28-young hahn-i	ndividual-1816-3		
 95 ronan	Ronan Dowling	Gorton Studios	378	29-Sam Boyer-Tr	ansparaTech, Inc-181	6-2	
96 Jacine	Jacine Luisi	Freelance, Gravi	357				
97 jrglasgow	James R Glasgow	individual	340				
99 effulgent	Alex Bronstein	ACQUIA	316				
 102 mfer	Matt Farina	individual	294				
106 jerdavis	Jeremiah Davis	advantagelabs	276				
 107 DamienN	Damien McKenna	Bluespark Labs	270				
119 moonray	Bala Bosch	Gravitek Labs	266				
 120 ChrisKeni	nedy	Rock the Vote	265				
121 litwol	Oleg Terenchuk	individual busin	265				
123 tirdadc	Tirdad	Phase2 Technole	256			i i	
124 indytecho	Neil Hastings	Treehouse Ager	252				
 126 MGN	Michael Nichols		238				
 129 dragonwi	Alan Doucette	Individual	222				
 131 ericduran	Eric J. Duran	Lullabot	208				
 134 hefox	Fox	individual	186				
 135 hyrcan	Patrick Settle		186				
 138 bleen18	Alexander Ross	individual	174				
140 earnie	Earnie Boyd	individual	168	1			
144 Alex UA	Alex Urevick-Ackelsbe	r Zivtech	135				
145 jdwfly	Joe Wheaton	individual	132				
147 aquarium	Jason	TopNotchTheme	127				
148 becw	Rebecca White	Palantir.net	125				
 149 jcfiala	John C Fiala	individule	124				
150 esmerel	Lynette Miles	TopNotchTheme	115				
155 kleinmp		Zivtech	99				
156 Aaron Ha	Aaron	freelance Drupa	97				1
163 dstol	David Stoline	individual mem	76				
166 sociotech		GoingOn Netwo	66				
168 develope	r-x		54				
170 HorsePur	170 HorsePun Steven N. Severinghau		51				
175 arlinsand	bulte		44	189 Ben Finklea	United States	Volacci	10
 176 tobby	Tobby Hagler	Phase2 Technole	44	190 fearlsgroove			9
178 vordude	Matt Kleve	Lullabot	31	192 technicolorenvy	Joseph Smith	individual	6
182 tekante	Chris Johnson	Phase2	21	195 blinkreaction		1	3
184 sheena_d	Sheena Donnelly	TopNotchThem	18	196 artem.taranyuk	Artem Taranyuk	blinkreact	2
 186 kthagen	Karl Hagen	individual	14	197 kking	Kevin King	Phase2 Te	1
		L 1			1		-

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Figure 5: The distribution of main developers across South America³⁶

							Sou	th America
								Brazi
					-	18-Bruno Massa-individual-2	2398	
133	wundo	Fabiano Sant	51	Brazil	Chuva Inc	199		
179	yukare	Fernando Co	20	Brazil	individual	28		
								cuba
160	dropcube	Ronny López	Cuba	individule	85		10	Luba

Figure 6: The distribution of main developers across the EU Area (The name showing before the formal name is the nick name of developer.)

						100 dczepierga	Damian Czepierga		301
	11 mm 10 mm					151 michal_cksource	michal		109
						172 mephir	Paweł Wilk	Past:PHP I	48
	1					73-Wiktor Walc-SuperHost-pl	-560		
						Poland			
						103 zoo33	Hannes Lilljequist	SthImCon	291
						104 Magnus	Magnus Gunnarsson	I am Certit	285
						142 TwoD	Henrik Danielsson	individual	140
93	add1sun	Addison 8	Denmark	Lullabot	385	159 Letharion	Claes Gyllensvärd	NodeOne	89
128	Freso	Frederik "	Denmark	Peytz & Co	226	68-Fredrik Jonsson-Fredrik Jo	nsson - xdeb.net-697-	2	
157	7 skiminki	Sami Kimi	Finland	Researche	94	Sweden			
						69-Bèr Kessels-berkes-604			
						57-Erik Stielstra-Drpal trainer	and freelance web de	veloper-830-	2
	43-Kjartan Mannes-individual-10	31				137 Jornit	Jorrit Schippers	nCode	181
Norway						181 ontwerpwerk		drupal d	23
						185 gdevlugt	Geoffrey de Vlugt	Renaissar	16
North EU						Netherlands			

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³⁶ For a more in-depth look at the profile of developers of each module, visit http://drupal.org/project/usage

					Terretain terretain see					
					65-Bojan Živanov	vić-Commerce Guys-728				
81 Uwe Hermann	Uwe Hermann	individual	483	Serbia						
87 webflo	Florian Weber	digitale in	415		67-Sascha Grosse	enbacher-MD Systems-722	2-3			
125 tstoeckler	Tobias Stöckler		240		39-Hans Salvisbe	erg-Individual-1153				
136 cburschka		individual	182	98	miro_dietiker	Miro Dietiker	MD Syster	337		
139 ax	Axel Kollmorgen	individual	171	152	rötzi	Julian	individual	102		
146 Eric Schaefer	Eric Schaefer	Vice Presi	130	161	floretan	Florian Loretan	Wunderkr	81		
174 ray007	Raimund Bauer	individual	45	Switzerla	nd					
180 Digidog		MAROQQ	23		38-jcnventura-in	dividual-1261-1				
187 eMPee584	Marcel Partap	student	13	Portugal		*			1	
13-Gerhard Killesreiter	-Tag1 Consulting-2757-1						1'			
10-Daniel Wehner-Indi	vidual,Student-3348		- 146		11-Gábor Hojtsy-	Acquia-3268-4				
7-Daniel F. Kudwien-unleashed mind -3648-9			130	sgabe	Gabor Seljan Hungary	freelance	221		15	
Sermany										
				Hungry				1	T	
153 Jeroen Bensch	Belgium Krimso	n d Jeroen	101							
1-Dries Buytaert-Acqui	a-11246-1			127	amateescu	Andrei Mater 12	7 amateeso	Andrei MaRomania	Tremend:	3
30-Steven Wittens-Indi	vidual-1556-1			122	Pasqualle	Bálint Csuthy 12	2 Pasqualle	Bálint Csu Slovakia	Mogdesig	
45-Wim Leers-Freelanc	e Drupal Developer-1013									
68B-Stefaan Lippens-in	dividual-648			Romania	Slovakia				1	
Belgium										
82 budda	Mike Carter	lxis IT	475	50-ufku-i	ndividual-956					
89 catch	Nathaniel Cato	hp Tag1 Cons	405	Turkey			1			
132 AjK	Andy Kirkham	Software/	207		59-Marc Ferran-i	ndividual-790				
169 jakeg	Jake Gordon	Web Deve	54		41-Jose Antonio	Reyero-individual-1078				
177 ff1	Ian Eldred	individual	33	143	Manuel Garcia	Manuel Garci Spain	Drupal fre	137		
75-nicholasThompson-	Turner Broadcasting System	s-543		Spain	Ay ye have the extract letters in each war. By Marie	The second second second second	The state of the s			
72-Stuart Greenfield -in	ndividual-561				-					
55-Richard Burford-Exa										
53-Steven Jones-Comp		T			20-Stella Power-	Annertech-2159-2				
CONTRACTOR OF THE PROPERTY OF	PR. T. C.				A LEGISLA OF A LANGUAGE OF THE PARTY OF		T		1	the state of the
32-joachim Noreiko-inc	dividual-1351-2									

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				108 rooby	Reuben Turk	Oxide Inte	269
				154 realityloop	Brian Gilbert	Realityloc	100
				158 dgtlmoon		Marmalad	93
				165 skwashd	Dave Hall	Dave Hall	73
				173 bugz_nz	Mark A	Australia	45
				213 sydneysha	n Shannon Murdo	ch Enigma Di	4
91 mrfelton	Tom Kirkpatrick	SystemSe	390	83 mh86	Matthlas Hutter	er epiqo	468
167 Simon Georges	Simon GEORGES	an indivic	59	80-Klaus Pt	80-Klaus Purer-individual-499		
				63-justinra	ndell- individual -746		
				42-Simon H	lobbs-individual-1034		
70-Frederic G. MARAND	-OSInet-586-2						
37-longwave-individual	-1264-1			15-Wolfgar	ng Ziegler-individual bus	iness-2694	
35-Yves Chedemois-ind	ividual-1274-2				1		4

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Figure 7: The distribution of main developers across Asia & Africa $^{\rm 37}$

Africa			New Zeal	Contract to the second second second			
				49-Dan Morri	son-		
South-Africa				Sparks Intera	ctive-		
26-adrian- Developm	nent Seed-1922-26		85	Bevan	Bevan Rudge	Previous	440
188 vernond	Vernon Denny	12	101	grobot	Chris Burgess	Giant Rob	296
			141	New Zeal	Kent Parker	Freelance	154
			171	hefox	Patrick Settle Phase	2 Technology	50
				1			
8							1
				1			
g							
\$			India				
			nicia	74. Jacob Sing	gh-Acquia-549		
			193		28491 Sudhir Porwal	Individual	5
			193	ļ	28431 Suunir Porwai	Individual	
\$				ļ			
**				ļ			
				ļ			
			China	§ 			
			183	edxxu	Jin Xu	INsReady	20
			Israel				
			191	Afief	Afief Halumi		6
				1			
				1			
8							
			Syrian Ar	b Republic			
				good_man	Khaled Alhourani	individual	78
(N			102	Boon Illen	Violen Villogia(I)	morroudt	

For a more in-depth look at the profile of developers of each module, visit http://drupal.org/project/usage

The Principle:

The people from rich countries can continue to work on your open source project for a longer time than the people from low income countries. While free labor can help your project move ahead, it is not enough to help you achieve success. Nobody wants to provide free labor forever and even people from USA and EU will eventually need a profit motive to continue working. Your project can not rely on the people who just work for fun after their boring daytime job especially with regard to the core development projects that need the high level skills. The senior engineers take the leading roles at lots of important projects of their companies. They only have limited time and engery to work for open source projects. The students have lots free time but most of them lack of enough skills to deal with the high request core or more important parts development.

My personal experience has also proved this. To save cost, I hired several senior developers to help me realize some projects. But the truth is hiring people as part-time help will deplete your time and money quickly in most cases. The excellent engineers are always overloaded in their full-time jobs that consume most of their energy during the work day. They just want to go to bed when they return to home. They are less efficient than average and projects tend to be completed late and of poor quality.

The thesis "Why Hackers Do What They Do" points out that in F/OSS projects, paid contributors are strongly motivated by work-related users' needs (55.7 percent) and value professional status (22.8 percent) more than volunteers. On the other hand, volunteers are more likely to participate because they are trying to improve their skills (45.8 percent) or need the software for non-work purposes (37%).38

What is behind the leaders?

Let us take a more deep look if the people of rich countries really work without requesting pay.

Exhibits1:Top10 Leader and their companies³⁹

³⁸ Why Hackers Do What They Do. By Karim R.Lakhani and Robert G.Wolf

³⁹ Explore each project at http://drupal.org/project/

Top 10 Leader and their companies	Red Personal nar	ne is WOMAN	Company	Commits
1	Dries Buytaert	Belgium	Acquia	11246
2 merlinofchaos	Earl Miles	United States	iO1 Labs	5911
3 moshe weitzman	Moshe Weitzman	n United States	Acquia	5387
4 KarenS	Karen Stevenson	United States	Lullabot	5231
5 dww	Derek Wright	United States	3281d Consulting	4974
6 quicksketch	Nathan Haug	United States	tullabot	4090
7 sun	Daniel F. Kudwie	Germany	unleashed mind	3648
8 webchick	Angie Byron	Canada	Acquia	3580
9 Dave Reid	Dave Reid	United States	Palantir.net	3466
10 dereine	Daniel Wehner	Germany	Individual,Student	3348

It is very clear that only one person is not a member of a commercial organization in the top 10 leaders. They are employees of 6 companies which are Acquia , I01Labs, Lullabot ,3281d Consulting, unleashed mind and Palantir.net. All the companies are Drupal-based companies and the leaders of Drupal communities are also the leaders or founders of their own Drupal companies. Daniel Wehner is the only one who does not own a company but he is a student who has enough time for his own projects and does not have time commitments to the family.

In the next step, we will take a look the Drupal Core module maintainers.

Figure 2: Drupal Core module maintainers 40

Drupal Core Commit	ter	Red Personal name	is WOMAN			
Status	Nick Name	Name	Core commits	Country	Company	All Commits
	Dires	Dries Buytaert	10361 commits	Belgium	Acquia	11246 commits
	catch	Nathaniel Catchp	171	United Kingdom	Tag1 Consulting	405 commits
	webchick	Angle Byron	2931	Canada	Acquia	3580 commits
	Gábor Hojtsy	Gábor Hojtsy	1608	Hungary	Acquia	3268 commits
inactive 1 year	drumm	Neil Drumm	764	United States	Drupal Association, CivicSpa ce lead developer	2683 commits
	quicksketch	Nathan Haug	3	United States	Lullabot	4090 commits
	pillarsdotnet	Bob Vincent	.2	United States	Contract Web Progra	955 commits
Not People	Git Migration	Relic of the Age of C	38	United States		22967 commits
inactive 3 years	killes	Gerhard Killesreiter	506	Germany	Drupal IT consultant,	2757 commits
inactive 4 years	Steven	Steven Wittens	1156	Belgium	Individual	1556 commits
inactive 5 years	Kjartan	Kjartan Mannes	383	Norway	Individual	1031 commits
inactive 10 years	Jeroen	Jeroen Bensch	101	Belgium	Krimson drupal Archi	101commits

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What do you find?

⁴⁰ Explore each project at http://drupal.org/project/

The individuals are all in the inactive status. 6 active leaders consist of 3(Dries, Webchick and Gabor Hojtsy) members of Acquia, 1 (Catch) member of Tag1 Consulting, 1 (quicksketch) member of Lullabot and pillarsotnet, the contract web programer.

Neil Drumm was not active in the core for one year and he had his own Neil Drumm Consulting corporation which works for Drupal-related consulting and projects. The other 4 individuals have not been active for over 3 years. Killesreiter left the core team 3 years ago. Steven Wittens left the core team 4 years ago. Kjartan Mannes left the core team 5 years ago. Jeroen Bensch left the core team 10 years ago. Git Migration is a service to store and maintain the code and does not count as an individual person. Steven Wittens and Jeroen Bensch come from Belgium which is the homeland of the Drupal founder, Dires. Gerhard Killesreiter comes from Germany while Kjartan Mannes comes from Norway. The above people are all European and close to Dries. All of them did not create a commercial company like Acuqia, Tag1 consulting and Lullabot. Jeroen Bensch, Kjartan Mannes and Steven Wittens all joined the community 11 years ago which was the original starting point of Drupal. Killesreiter and Drumm joined 5 years ago. Bensch is now a Drupal developer who is working at Krimson, a Drupal company of Belgium.

The 3 members of the original four man team who worked for the Drupal core over 11 years left the team. Only the founder, Dries, remains on the team. The two other men who work for the Drupal core for over 5 years all left already. Gabor Hojtsy(4 years), webchick(3 years) and Catch(4 weeks) are still on the team, but they are considered young in the core team. In essence, all senior leaders of the Core team with the exception of Dries have already left the community.

People will leave after their passion disappears and they find they cannot make money like others.

Only the leaders are making money with Drupal.

This proves the principle again that passion can not last forever without profit return.

Exhibits3: Top 10-30 Leaders and their companies⁴¹

⁴¹ Explore each project at http://drupal.org/project/

Top 10-30 Leader and their companies	Red Personal nar	ne is WOMAN	Company	Commits
11 Gábor Hojtsy	Gábor Hojtsy	Hungary	Acquia	3268
12 JohnAlbin	John Albin Wilkin	United States	Palantir.net	3041
13 killes	Gerhard Killesrei	1 Germany	Tag1 Consulting	2757
14 arthurf	Arthur Foelsche	United States	Palantir.net	2715
15 fago	Wolfgang Ziegler	Austria	individual business	2694
16 drumm	Neil Drumm	United States	Nell Consulting, Inc.	2683
17 hass	Alexander Has	Germany	individual business	2530
18 brmassa	Bruno Massa	Brazil	Tag1 Consulting	2398
19 bdragon	Brandon Bergren	United States	Tag1 Consulting	2159
20 stella	Stella Power	Ireland	Annertech	2155
21 aaron	Aaron Winborn	United States	individual is dying	2105
22 nedjo	Nedjo Rogers	Canada	Chocolate Lily	2056
23 hunmonk	Chad Phillips	United States	individual	2016
24 drewish	andrew morton	United States	Zivtech	1947
25 kbahey	Khalid Baheyeldi	ı Canada	http://2bits.com/, pe	<u>1947</u>
26 adrian	adrian	South Africa	Development Seed	1922
27 alex_b	Alex Barth	United States	Development Seed	1819
28 yhahn	young hahn	United States	Development Seed	1816
29 sdboyer	Sam Boyer	United States	TransparaTech, Inc	1624
30 Steven	Steven Wittens	Belgium	Individual	1556

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In the Top 10-30 leaders only 3 people are individuals which include Steven Wittens who was introduced in the core group, Aaron Winborn (aaron) and Chad Phillips (hunmonk). Wittens has been inactive for a long time. It is regretful that Aaron Winborn is seriously ill and is dying in his young age. He is asking for donation in his personal page. The other 17 people are full-time Drupal business men.

It shows again that almost no one works as free labor for the Drupal community.

Instead, companies like Acquia, Palantire.net, Tag1 counstuliting and Developement Seed are powering the Dupal community.

Then let us take a look at the people who maintain more than three modules at the same time. To maintain over three modules is never an easy thing to do and costs plenty of time and energy. The red company name indicates that the developer is a top 30 leader.

We will find that 27 people from the list represent a business while only 1 person is an individual (Winborn, who is ill) in all 28 people.

6 are from Acquia; 3 are from Lullabot;

4 are from Development Seed; 3 are from Palantir.net

The others come from unleashed mind, Zivtech, iO1 Labs, Annertech MD Systems or work for their own indivudal bussiness.

It shows again that no free labor is present in the core area which takes a lot of hard work.

Figure 4: People who maintain more than three modules at the same time 42

Cross over 3 Mo	odule Maintainer	Red Company na	me of Top 30 Lea	ider users		
Commit Rank	Nick Name	Name	Country	Company	Commits	Modules
	9 Dave Reid	Dave Reid	United States	Palantir.net	3466	1
	7 sun	Daniel F. Kudwie	Germany	unleashed mind	3648	
	46 Rob Loach	Rob Loach	Canada	Acquia	998	
	6 guicksketch	Nathan Haug	United States	Lullabot	4090	
	15 fago	Wolfgang Ziegler	Austria	individual business	2694	
	24 drewish	andrew morton	United States	Zivtech	1947	
	4 KarenS	Karen Stevenson	United States	Lullabot	5231	
	5 dww	Derek Wright	United States	3281d Consulting	4974	
	26 adrian	adrian	South Africa	Development Seed	1922	
	3 moshe weitzman	Moshe Weitzmar	United States	Acquia	5387	
	8 webchick	Angie Byron	Canada	Acquia	3580	
	10 dereine	Daniel Wehner	Germany	Individual, Student	3348	
	11 Gábor Hojtsy	Gábor Hojtsy	Hungary	Acquia	3268	
	77 febbraro	Frank Febbraro	United States	Development Seed	530	
	2 merlinofchaos	Earl Miles	United States	iO1 Labs	5911	
	12 JohnAlbin	John Albin Wilkin	United States	Palantir.net	3041	
	13 killes	Gerhard Killesrei	l Germany	Tag1 Consulting	2757	
	14 arthurf	Arthur Foelsche	United States	Palantir.net	2715	
	17 hass	Alexander Has	Germany	individual business	2530	
	20 stella	Stella Power	Ireland	Annertech	2155	
	21 aaron	Aaron Winborn	United States	individual	2105	
	22 nedjo	Nedjo Rogers	Canada	Chocolate Lily	2056	
	28 yhahn	young hahn	United States	Development Seed	1816	
	33 pwolanin	Peter Wolanin	United States	Acquia	1347	
	62 eaton	Jeff Eaton	United States	Lullabot	776	
	64 jmiccolis	Jeff Miccolis	United States	Development Seed	734	
	67 Berdir	Sascha Grossenba	Switzerland		722	
	74 JacobSingh	Jacob Singh	India	Acquia	549	

⁴² Explore each project at http://drupal.org/project/

The Principle: At the beginning stage, attracting more talent to join the community is the most important thing for your project. But as your project is growing, the roles and responsibilities each person has to manage are also expanding and become more complex. Management itself cost lots of money and energy, so it is hard to manage people one by one. Furthermore, just as the previous principle has shown, members cannot continually contribute to the project as free labor. The person who fights alone will find it difficult to win contracts and grow his business. It is similar to guerrilla warfare which can keep you alive, but it fails to give you full control over a region which needs large-scale war campaigns. As the general, you must organize your people well like a formal army and not as a guerrilla team. Your responsibility is not to coordinate the countless partisans but to organize the bands of brothers.

Group Showed Companies of Top 200 Member(Top 100 Module Maintainer), Red Company name shows Top30 Leaders

Commit Rank	Nick Name	Name	Country	Company	Commits
1		Dries Buytaert	Belgium	Acquia	11246
3	moshe weitzi	Moshe Weitzman	United States	Acquia	5387
	webchick	Angie Byron	Canada	Acquia	3580
11	Gábor Hojtsy		Hungary	Acquia	3268
The second secon	pwolanin	Peter Wolanin	United States	Acquia	1347
	mikeryan	Mike Ryan	United States	Acquia	1271
44	greggles	Greg James Knaddisc	United States	Acquia	1015
	Rob Loach	Rob Loach	Canada	Acquia	998
54	ezra-g	Ezra Barnett Gildesg	United States	Acquia	882
74	JacobSingh	Jacob Singh	India	Acquia	549
99	effulgentsia	Alex Bronstein	United States	Acquia	316
4	KarenS	Karen Stevenson	United States	Lullabot	5231
6	quicksketch	Nathan Haug	United States	Lullabot	4090
62	eaton	Jeff Eaton	United States	Lullabot	776
93	add1sun	Addison Berry	Denmark	Lullabot	385
131	ericduran	Eric J. Duran	United States	Lullabot	208
178	vordude	Matt Kleve	United States	Lullabot	31
62	eaton	Jeff Eaton	United States	Lullabot	776
90	jjeff	Jeff Robbins	United States	Iullabot(Co-founder)	403
13	killes	Gerhard Killesreiter	Germany	Tag1 Consulting	2757
19	bdragon	Brandon Bergren	United States	Tag1 Consulting	2159
89	catch	Nathaniel Catchp	United Kingdom	Tag1 Consulting	405
18	brmassa	Bruno Massa	Brazil	Tag1 Consulting	2398
9	Dave Reid	Dave Reid	United States	Palantir.net	3466
12	JohnAlbin	John Albin Wilkins	United States	Palantir.net	3041
14	arthurf	Arthur Foelsche	United States	Palantir.net	2715
148	becw	Rebecca White	United States	Palantir.net	125

Figure 1: Top 200 members of Drupal community and their companies 43

Explore each project at http://drupal.org/project/usage

201	tekante	Chris Johnson	United States	Phase2	21
77	febbraro	Frank Febbraro	United States	Phase2 Technolog,CTO	530
123	tirdadc	Tirdad	United States	Phase2 Technology	256
171	hefox	Patrick Settle	United States	Phase2 Technology	50
176	tobby	Tobby Hagler	United States	Phase2 Technology	44
216	kking	Kevin King	United States	Phase2 Technology	1
135	hyrcan	Patrick Settle	United States	Phase2 Technology	186
24	drewish	andrew morton	United States	Zivtech	1947
79	tim.plunkett	Tim Plunkett	United States	Zivtech	517
144	Alex UA	Alex Urevick-Ackel	sk United States	Zivtech	135
155	kleinmp		United States	Zivtech	99
52	Allie Micka	Allie Micka	United States	Advantage Labs, pajunas inte	942
106	jerdavis	Jeremiah Davis	United States	Advantage Labs	276
65	bojanz	Bojan Živanović	Serbia	Commerce Guys	728
94	EclipseGc	Kris Vanderwater	United States	Commerce Guys	380
67	Berdir	Sascha Grossenbac	he Switzerland		722
98	miro_dietike	Miro Dietiker	Switzerland	(1987)	337
26	adrian	adrian	South Africa	Development Seed	1922
	alex_b	Alex Barth	United States	Development Seed	1819
28	yhahn	young hahn	United States	Development Seed	1816
64	jmiccolis	Jeff Miccolis	United States	Development Seed	734

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From the above data we find that the top leaders have already formed the bonds of brotherhood and are active as a group. This reflects how highly committed members tend to bond together.

The under are the lists which shows the structures of the bonds.

1	Acquia	4 Top 30-leaders & 10 leaders are active in Top 100 modules
2	Lullabot	2 Top 30- leaders & 8 leaders are active in Top 100 modules
3	Palantir.net	3 Top 30-leaders & 4 leaders are active in Top 100 modules
4	Development Seed	3 Top 30-leaders & 4 leaders are active in Top 100 modules
5	Tag1 Consulting	3 Top 30-leaders & 4 leaders are active in Top 100 modules
6	Zivtech	1 Top 30-leaders & 4 leaders are active in Top 100 modules

7 Advantage Labs 1 Top 30-leaders & 2 leaders are active in Top 100 modules

Phase 2 Technology
 Commerce Guys
 Ieaders are active in Top 100 modules
 MD Systems
 leaders are active in Top 100 modules
 leaders are active in Top 100 modules

7 of the 10 companies have leaders who are in the Top 30 leaders of Drupal community. They form the core among the different bands of brothers. While phase2 Technology has no representation in the Top 30 leaders of Drupal community, they have 7 members who are active in the Top 100 modules and its CTO Febbraro is ranked as 77th in the community. Both Commerce Guys and MD Systems have 2 leaders who are in Top 100 leaders. This means 10 companies who have over 2 Top 200 leaders are active in the Top 100 most important modules. The 10 companies all together have 47 members of Top 200 leaders (25%). They have formed the groups and work together like bands.

The research on open source software also show that the leaders of open source systems contribute the most to these projects.

From an analysis of 25 million lines of open source code, constituting 3149 projects, the distribution of contributions is as follows: three-quarters of the nearly 13,000 contributors made only one contribution; only one in twenty-five had more than five contributions. Yet the top decile of contributors accounted for fully 72 percent of the code contributed to the open source projects, and the top 2 deciles for 81 percent. The distribution would be even more skewed if one accounts for those who simply reported errors.

For Apache, the "developers' mailing list" is considered as the key list of problems to be solved, while other lists play a less significant role. The top 15 developers contribute 83 percent to 91 percent of changes (problem reports by way of contrast offer a much less elitist pattern)⁴⁴.

Let us also take a look at the distribution among the Top 30 leaders.

Figure 2: The distribution of The Top 30 leaders⁴⁵

	Top 10	Top10-30	SUM	
Acquia	3	1	4	
iO1 Labs	1	0	1	
Lullabot	2	0	2	
3281d Consulting	1	0	1	
unleashed mind	1	0	1	

⁴⁴ Economic Perspectives on Open Source by Josh Lerner and Jean Tirole

⁴⁵ Explore each project at http://drupal.org/project/usage

Palantir.net	1	2	3
Tag1 Consulting	0	3	3
Annertech	0	1	1
Chocolate Lily	0	1	1
Zivtech	0	1	1
http://2bits.com/	0	1	1
Development Seed	0	3	3
TransparaTech, Inc	0	1	1
Neil Consulting	0	1	1
Individual Business	0	2	2
Individual	0	4	4

Acquia, Lullabot, Palantire.net, Tag1 Consulting and Development Seed each have over 2 Top 30 leaders. Altogether, they are represented by 15 people among the Top 30 Leaders.

The 9 companies: iO1 Labs,3821d Consulting, unlashed mind, Annertech, Chocolate Lily, Zivtech, 2bits, TransparaTech and Neil, each is led by one Top 30 leader.

This leaves 2 leaders who operate their individual Drupal business and the other 4 Drupal specialists work for others.

Based on the above data, we find that 24 leaders are in the formal bands of brothers (Drupal-branded companies). Only 6 leaders are not in a Drupal-branded company or work as salaried men. 80% of the top 30 leaders are active in a business organization. Few work alone.

Figure 3: Maintainers who cross over 3 Modules⁴⁶

Company	Member Number
Palantir.net	3
unleashed mind	1
Acquia	6
Lullabot	3
Zivtech	1
3281d Consulting	1
Development Seed	4
iO1 Labs	1
Tag1 Consulting	1
Annertech	1
Chocolate Lily	1
MD Systems	1
Individual business	2

⁴⁶ Explore each project at http://drupal.org/project/usage

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Individual	1

This shows that only 3 of the 28 persons listed work as individuals. Two of the three are individual businesses and Aaron Winnborn is the only individual not represented by a business and has health trouble. The other 25 persons all belong to companies. It is rare for one to work alone.

From the above lists we can find that the leading companies form the real Penguin Group.

Figure 4: The Real Penguin Group⁴⁷

ACQUIG	Lullabot	palantir.net
Acquia	Lullabot	Palantir.net
	i01	3281d Consulting
Development Seed	iO1 Labs	3281d Consulting
annertech	MDSYSTEMS	Zivtech
Annertech	MD Systems	Zivtech
TransparaTech	ADVANTAGE LABS Training Mostling Solutions The lab	commerce guys
TransparaTech, Inc	Advantage Labs	Commerce Guys
phase://technology *open source. open minds.	Tag1 Consulting Performance and Scalability Experts	✓ UNLEASHED MIND REALIZING YOUR IDEAS
Phase2 Technology	Tag1 Consulting	unleashed mind

⁴⁷ Explore each project at http://drupal.org/project/usage

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abits	
http://2bits.com/	

Based in Burlington, Massachusetts, Acquia was founded in 2007 and raised 7 million in its first round of fundraising. It has over 700 enterprise level customers and its hosting service handles over 2.5 billion HTTP requests per month. It has now already raised \$38.5 million in four rounds of fundraising. The Enterprise level customer is the main target of Acuqia and its primary business. Its secondary business is a hosting service for small and middle level customers. From Acquia's blog and talks by its CTO it is apparent that the hosting service is aimed at building Acquia's reputation and attracting interest in its services and products while the Enterprise level customer is the more important focus of Acquia's business. He pointed out the Acuqia will have a better future than Joomla because Joomla has fewer Enterprise level customers and that the Drupal system has the advantage of being very flexible and easily extendable. 48 In my opinion, the flexibility of the Drupal system is based on the raw status of the core package which requires multiple steps before a finished product is achieved. One would be inclined to feel that Drupal's core package provides only the raw materials that require much more work than the Joomla system which may not be as flexible but does not require as many steps to achieve an end-product. To use an analogy, using Drupal is more like buying ingredients from the grocery store while using Joomla is more like buying take-out from a restaurant.

The introductions of leading Drupal companies:

Lullabot ⁴⁹provides Drupal consultation and training services to customers. In contrast to the free training of Acuqia, Lullabot charges fees for its Drupal training and education programs. The training arm of Lullabot is part of its core business. Its online videos on podcast which train people to use the Drupal system are very successful. Building sites for enterprise level companies is also part of its core business. Lullabot's customers include the GRAMMYs, MTV UK, Sony Music, Lifetime Television, The George Lucas Educational Foundation, Leo Laporte's TWiT network, Ringo Starr (link from archive.org), and many others. Lullabot is located in Des Moines, Idaho.

⁴⁸ http://buytaert.net/joomla-vs-drupal-business-models-and-commercial-ecosystem http://drupal.org/services/lullabot

<u>Palantir.net</u>⁵⁰ is a Chicago-based firm which provides service for colleges, universities, museums, non-profit and professional organizations, design agencies and corporations all enterprise level customers. Palantir.net is an **Acquia Enterprise Select Partner**.

<u>Development Seed</u> ⁵¹ is a company which provides the integrated collaboration of the product and platform based on the Drupal system. Open Atrium is its product. The company is leading in the development of many important modules including Features, Context, Spaces, Aegir, Kit, Data, i18n, Boxes, Strongarm, Mail Handler, the Notifications and Messaging frameworks, and the SMS Framework. They also provide services for lots of large-scale organizations as technology consultants to help these organizations deal with the high demandedcommunication challenges. The organization include the World Bank, the United Nations, USAID, Human Rights Watch, the New America Foundation, and the National Democratic Institute . It locates at Washington, DC .

<u>iO1 Labs⁵²</u> is a UK and EU-based Drupal consultancy. It supports the important View, Panels, Ctools modules and numerous other smaller projects. It was founded as a software development company in 2004.

3281d consulting supplies the full-package of solutions to users. It gives users an all-in-one install solution to cover most important modules. You do not need to search and explore the modules and install them one by one. It greatly lowers the barriers to getting a new Drupal site up and running. They have many years of experience developing and deploying issue tracking and project management systems, automated build and test infrastructures, and integrating them with numerous revision control systems.

<u>Annertech</u>⁵³ is an Ireland-based Drupal consultancy. It is found by Stella Power in 2008. Power is the maintainer of some important modules like Code Review and Lightbox2. Another important partner in the company is Alan Burke who is especially skilled with the Ubercart Realex Modules. He joined the company in 2010. They help small businesses and large enterprises to build Drupal-based websites.

MD Systems⁵⁴ is a Swiss Drupal-based company. Its business focus is limited to the geographical boundaries of Switzerland.

<u>Zivtech⁵⁵</u> is also a company which focuses on Drupal-based technology solutions and Drupal-related training. It helps customers by providing services which include site architecture, building, theming, deployment, migrations, and updates. They also supply high-level module development services for

⁵⁰ http://drupal.org/node/186870

http://drupal.org/node/61531

http://drupal.org/node/1156692

http://drupal.org/node/1170976

⁵⁴ http://www.md-systems.ch/

http://drupal.org/node/286955

customers. Their training programs cover all levels from newbies to those in the professional level. Its base is located in Philadelphia, Pennsylvania.

<u>TransparaTech, Inc⁵⁶</u> was founded by a Drupal specialist who is based mainly in San Diego and New York. The company was founded to meet the needs of larger project owner and enterprise clients.

<u>Advantage Labs⁵⁷</u> focuses on providing technology solutions for Drupal-based sites and Drupal training. Their base is in Minneapolis, Minnesota.

<u>Commerce Guys⁵⁸</u> focuses on e-commercial solutions for Drupal-based sites. Their bases are located in Jackson, Mississippi and Paris, France. There are 7628 live sites which use Commercial Guys' product Drupal commercials to power their Drupal site.

<u>Phase2 Technology</u> ⁵⁹ mainly provides technology for publishing, public policy and non-profit clients using open source technology including Java and the Drupal social publishing platform. Its specialists are good at content management systems, open data integration, community applications, CRM, API integration and custom application development. The company is based in Alexandria, Virginia and **is an Enterprise Select Partner of Acquia.**

<u>Tag1⁶⁰</u>Consulting focuses on scalability solutions for Drupal sites. Its members span 5 time zones. They also provide Drupal-related consulting and they contribute to the Drupal core and other modules. They also participate in the development of Presslfow, a high performance Drupal Distribution module.

Unleashed mind⁶¹ is a German company.

<u>2bits.com</u>, Inc⁶² is a privately owned Canadian federal corporation based in Waterloo, Ontario, Canada. The clients range from single person websites to Fortune 500 companies. Its clients come from all over the world including the Middle East and Asia.

Now Acquia is using the "Acquia Enterprise Select Partner" status to attract more companies to join its group. The Partner status is an alliance aimed to help other smaller, Drupal-based companies to accept more large projects which these individual companies cannot manage with their own resources. In truth, it is more like these smaller companies approach Acuqia to provide them with some technology and strategy support when their own resources are too limited for the larger projects that they accept. Of course, profits are shared between these small companies and Acquia. We can consider this as the second generation penguin group. It can be observed that just as power of Dries is growing with the other leaders, his company also is growing with the companies of those leaders.

As long as the benefits exceed the costs, the programmer is expected to contribute and firms make a rational decision to hire programmers to contribute to open source projects. ⁶³

⁵⁶ http://transparatech.com/

http://www.advantagelabs.com/

http://commerceguys.com/

http://www.phase2technology.com/

⁶⁰ http://tag1consulting.com/

http://www.unleashedmind.com/

http://2bits.com/

Part 5

Principle 5: The commercial modules will not be in conflict with the non-commercial modules or corrupt the eco-system of open source communities

Dries, the founder of Drupal criticized his competitor Joomla that the commercial modules of the Joomla community will hinder the future of Joomla. ⁶⁴ While Dries is proud of his over ten thousand modules, my intuition tells me that the "free" modules hint at a form of socialism — a danger for Drupal. Is it true that the commercial modules will prevent the future growth of Joomla? This research will show that the commercial modules are not conflicting with the non-commercial modules or corrupt the eco-system of Open source communities. Further, the commercial modules are a great supplement to the community which only has non-commercial modules because they bring together two different types of developers who have different views and focus.

Section 5-1: Introduction for Joomla! Living by Free and Growing by License

Joomla is the other open source giant of CMS area.

Joomla Extension is anything that extends Joomla's functionality beyond the core. It operates on the same concept of modules, as does Drupal. Basically, they divided the extension to several types which are Components, Modules and plugins.

Components*

Components are the most fundamental of Joomla extensions. Output created by a component is displayed in the main content area. Whenever "Joomla! "is invoked, a component is always called upon.

Modules*

Modules are used to display small pieces of content, usually to the left, right, top or bottom of a rendered page. For example the menu modules are one of most popular modules.

⁶³ Why Hackers Do What They Do by Karim R.Lakhani and Robert G.Wolf

⁶⁴ http://buytaert.net/joomla-vs-drupal-business-models-and-commercial-ecosystem

Plugins*

Most plugins are event driven. Plugins can attach listener functions and classed to specific events on the "Joomla!" that can throw using the global event dispatcher, for example, content filtering based on an event.

Here, we find that all the different types of extensions of Joomla are uniformly called Modules in Drupal. This however, is not the key difference between Joomla and Drupal.

Section 5-2 the Modules

It was only recently that many engineers and specialists have a strong impression that Joomla is stronger that Drupal at the theming, while Drupal is stronger at the Modules than Joomla. However, things have changed quickly since and now Joomla has 8764 extensions in its community while Drupal has 13852 modules indicated on their front page. Actually with research, Joomla's number of extensions is 7016 compared to Drupal's 8926 modules based on the Drupal CVS. Joomla is fast catching up with Drupal.

What is driving the growth of Joomla so quickly? Let us take a look the data of the top rated and most favored extensions.

Figure 1: Highest rated and most popular 134 Extensions 65

Most rated and Popular 134 Extensions				
commercial	25	18.66%		
pro version	12	8.96%		
support	3	2.24%		
site builder	3	2.24%		
sell book	1	0.75%		
Donate	32	23.88%		
Free	58	43.28%		
	134			

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I explored the 134 highest rated and most popular modules and their developers' websites. 66

Basically the modules consist of 7 categories:

66 http://extensions.joomla.org/

⁶⁵ http://extensions.joomla.org/

1 commercial modules. The developers sell the modules as business software and gain the profit

2 the free version accompanied with the professional version which is similar to the commercial modules.

The professional version modules always have more functions, no advertisements and more beautiful themes than the free version. You can try the free version first and upgrade to the Professional version when the need arises.

3 support license. For the average person and small website owner, it is difficult to install and configure the Joomla modules because most of them are businessmen and have little experience in dealing with web design. Therefore, some developers sell support services to help their clients install and configure their modules, but the module itself remains free.

- 4 Developers lease their modules as advertisements to showcase their strong engineering skills to customers and attract clients to hire them to build websites.
- 5 Developers sell books that teach site owners how to build and use their own Joomla websites.
- 6 Developers appeal to users to donate to their project on their websites and download pages.
- 7 Free with no requests for donations.

We can divide the 7 types into 3 groups based on their inclination for profit.

- 1 These are professional developers who rely on developing commercial modules as a career. They are made up of developers of commercial modules and Pro version modules, site builders and educators. 32.84% (44 of 134) of the modules belong to this group.
- 2 These developers are facing financial constraints and need users to support their projects. The developers who are appealing for donations make up this group. 23.88% (32 of 134) of the modules belong to this group.
- 3 These are experienced and senior engineers who y have jobs and spend their leisure time by making modules that are totally free. 43.28% (58 of 134) of the modules belong to this group.

It is clear that over half of the top developers will face financial constraints or have less incentive to contribute to Joomla if they do not receive any financial support from users. A senior module developer of Drupal community told me that he spent much time and energy to build modules and did not charge any fees for them. However, he now feels used by the commercial Drupal-based companies who are making huge profits from large contracts with

clients while most module developers get nothing. This is not a rare example among the committed module developers of Drupal.

Yes Drupal-based companies are growing quickly based on the reputation of Drupal modules while most of the module builders get nothing. It is clearly unfair.

We can imagine what will happen to Joomla if the 33% or 57% top contributors left Joomla or stop contributing to Joomla.

The free Joomla core and the variety of modules help to sustain Joomla, but the commercial modules and Pro version modules help Joomla expand quickly and attract more engineers to join the community.

Let us take an in-depth look at the modules.

Section 5.3 The distribution of whole modules shows the end user orientation

The module developers help Joomla to stay on the cutting edge of website development and user-centered orientation

Figure 2: The statistics for each extension category 67

		number	
1	Social Web	922	13.14%
2	Photos & Images	639	9.11%
3	News Display	511	7.28%
4	Site Management	406	5.79%
5	Maps & Weather	360	5.13%
6	Style & Design	310	4.42%
7	Access & Security	307	4.38%
8	Structure & Navigation	298	4.25%
9	Multimedia	231	3.29%
10	Ads & Affiliates	229	3.26%
11	Contacts & Feedback	228	3.25%

⁶⁷ http://extensions.joomla.org/

12 e-Commerce 214 3.05% 13 Core Enhancements 186 2.65% 14 Living 181 2.58% 15 Communication 173 2.47% 16 Directory & Documentation 169 2.41% 17 Search & Indexing 164 2.34% 18 Calendars & Events 145 2.07% 19 Clients & Communities 141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31<				
14 Living 181 2.65% 15 Communication 173 2.47% 16 Directory & Documentation 169 2.41% 17 Search & Indexing 164 2.34% 18 Calendars & Events 145 2.07% 19 Clients & Communities 141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47%	12	e-Commerce	214	3.05%
181 2.58% 15 Communication 173 2.47% 16 Directory & Documentation 169 2.41% 17 Search & Indexing 164 2.34% 18 Calendars & Events 145 2.07% 19 Clients & Communities 141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	13	Core Enhancements	186	2.65%
15 Communication 173 2.47% 16 Directory & Documentation 169 2.41% 17 Search & Indexing 164 2.34% 18 Calendars & Events 145 2.07% 19 Clients & Communities 141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47%	14	Living	181	2.58%
16 Directory & Documentation 169 2.41% 17 Search & Indexing 164 2.34% 18 Calendars & Events 145 2.07% 19 Clients & Communities 141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	15	Communication	173	2.47%
17 Search & Indexing 164 2.34% 18 Calendars & Events 145 2.07% 19 Clients & Communities 141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	16	Directory & Documentation	169	
18 Calendars & Events 145 2.07% 19 Clients & Communities 141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers 0.47%	17	Search & Indexing		
141 2.01% 20 Sports & Games 132 1.88% 21 Editing 130 1.85% 22 Administration 126 1.80% 23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	18	Calendars & Events	145	
21 Editing 130 1.85%	19	Clients & Communities	141	
130 1.85% 126 1.80% 126 1.80% 127 1.77% 124 1.77% 124 1.77% 125 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.71% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 120 1.37% 1.23	20	Sports & Games	132	1.88%
126 1.80%	21	Editing	130	1.85%
23 Financial 124 1.77% 24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	22	Administration	126	1.80%
24 Languages 124 1.77% 25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	23	Financial	124	1.77%
25 Content Sharing 120 1.71% 26 Tools 98 1.40% 27 Vertical Markets 96 1.37% 28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	24	Languages	124	
98 1.40%	25	Content Sharing	120	
96 1.37%	26	Tools	98	1.40%
28 News Production 86 1.23% 29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	27	Vertical Markets	96	1.37%
29 Miscellaneous 63 0.90% 30 Mobile 46 0.66% 31 Migration & Conversion 33 0.47% 32 Hosting & Servers	28	News Production	86	
30 Mobile 46 0.66%	29	Miscellaneous	63	
31 Migration & Conversion 33 0.47% 32 Hosting & Servers 0.47%	30	Mobile		
32 Hosting & Servers	31	Migration & Conversion		
	32	Hosting & Servers		

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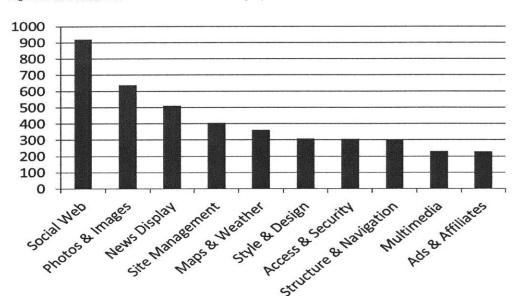


Figure 3: The statistics for each extension category ⁶⁸

The Social Web category (922 modules) is ranked first. It shows that the direction of the development of **modules for Joomla** is very **sensitive to new movements and trends of the Internet**. These days, social networking sites like Facebook and Zynga are two of the most popular websites and demonstrate why this new area of web development is called web2.0.

Thus, it is clear to see that the module developers help Joomla stay on top of current trends of the Internet world.

Photos & Images (639 modules) is the second most in-demand group. Images can convey information directly and quickly to people. Images need no translation and have no language barriers and are perceived by the human brain effortlessly.

News Display (511 modules) is ranked third, right behind the category Photos & Images.

Site management (406 modules) is always important, so no people will doubt it is in the top 5.

With the exception of the Social Web group, it is hard to accept that the Maps & Weather category (360 modules) ranks among the top five. After some consideration, one comes to the conclusion that many people rely on the Internet to check the address of an event or community meeting and make their plans based on the given map directions.

Thus, we can deduce the behavioral pattern of end-users from the Top 5 module list.

⁶⁸ Collect and count Raw data from http://extensions.joomla.org/

End users get information from Photos&Images (Category 2) and News (Category 3) modules which are posted or shared by Social Web (Category 1) modules and head to their meeting destinations after checking information from Maps &Weather (Category 5).

Yes it is exactly what we do in every day. It shows again that the **module developers are** sensitive to the needs of end users and help Joomla remain at the forefront of Internet trends.

Here, I will divide the modules to three different orientations. It will help us to understand why commercial modules will not be in conflict with non-commercial modules.

<u>The end users orientation</u> refers to the modules that are developed for the end users who are surfing the website i.e. the customers of the site owner.

<u>Site owner and administrator orientation</u> refers to the modules that are developed for the site owners. The modules will help site owners to maintain operate the sites.

<u>Profit Orientation</u> refers to the modules that will help site owners run a for-profit business.

From the above criteria, we can categorize the module groups in the following manner:

End users orientation:

1 Social Web (922), 2 Photos & Images (639), 3 News Display (511), 5 Maps & Weather (360),

9 Multimedia (231)

Site owner and administrator orientation:

4 Site Management (406), 6 Style & Design (310), 7 Access & Security (307), 8 Structure & Navigation (298)

Profit Orientation: 10 Ads & Affiliates (229)

User-centered orientation development shows great potential for growth and module developers have enabled Joomla to catch this wave.

Section 5.4 The distribution of The active Modules - the site owners' attitude

The **triangular relationship** of **end users, module developers and site owners** is the key to help the Joomla community to grow. In the previous section, we conclude that module developers are trying to determine the needs of end users and stay abreast of the latest Internet trends. The data also shows that the developers have an end user centered orientation. But one key player that has yet to be discussed is the role of site owners.

So what is the site owners' attitude toward the modules that have been developed by the module developers? We can use the data activity to measure the attitude of site owners. The activity is measured by the number ratings and reviews of modules. If only a few site owners rate and review (normally less than 5 people to rate) the module, then no star will be indicated on the module page and connotes that the module is not popular and not widely accepted by site owners. Based on the data I collected, there are 2448 starred modules among 7016 modules. If we take a look at the same data from Drupal, we can find that only 182 site owners have installed 2500 of 8926 Drupal modules. We can count the modules which have been installed fewer than 180 times as unpopular modules. Using this data activity that is based on the ratings and reviews of site owners can be an important parameter to measure the site owners' attitudes toward the different modules.

Figure 4 : The statistics for the ratio of $\,$ active versus active and inactive modules in each extension $\,$ category 69

Rank	Module Name	Active M	Active/(active+inactive)
------	-------------	----------	--------------------------

	NAME OF TAXABLE PARTY.
259	28.09%
	32.24%
204	39,92%
	3.7.68%
<u>143</u>	46.58%
125	40.32%
121 ¹	40.60%
98	42.98%
87	46.77%
<u>78</u>	46.15%
76	35.51%
74	32.03%
74	32.31%
66	45.52%
	206 204 153 125 121 98 87 78 76 74 74

⁶⁹ Collect and count Raw data from http://extensions.joomla.org/

15	Communication	64	36.99%
19	Clients & Communities	60°	42.55%
14	Living	59	32.60%
5	Maps & Weather	.52	14.44%

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End users orientation:

1 Social Web (259/922), 2 Photos & Images (206/639), 3 News Display (204/511),

18 Maps & Weather (52/360) \downarrow 5, 12 Multimedia (231) \downarrow 9

• The ↓ green arrow shows the rank of the module group fall as compared to its rank at the whole distribution in section 5-3. The 5 show its rank at the whole distribution is 5.

Site owner and administrator orientation:

- **4** Site Management (153/406), **5** Access & Security (143/307) ↑ 7, **6** Style & Design (125/310), **7** Structure & Navigation (298) ↑ 8, **8** Contacts & Feedback (98/228) ↑ 11
- 9 Core Enhancements (87/186) ↑ 13, 10 Directory & Documentation (78/169) ↑ 16
- * The \uparrow 8 red arrow shows the rank of the module group rise compared to its rank at the whole distribution section 5-3. The 8 show its rank at the whole distribution is 8.

Profit Orientation: 13 Ads & Affiliates (74/229) \downarrow 10, 11 e-Commerce (76/214) \uparrow 12

The data shows that the site owners show strong interest in the modules which help them to configure and administrate their sites. 5 module groups of <u>site owner and administrator</u> <u>orientation</u> received a higher rank. Core Enhancements (87/186), Contacts & Feedback (98/228) and Directory & Documentation (78/169) are new groups in the Top 10.

Two end users orientation module groups are out of the top 10 but the top three remains unchanged.

In profit orientation group, Ads & Affiliates (74/229) fall from 10 to 13, but e-Commerce (76/214) is up from 12 to 11.

Here we conclude that site owners basically have the same attitude as module developers with regard to the <u>end users orientation modules</u>. That is why the top 3 modules remain in unchanged positions. However, it is a clear that many site owners do not care much for 18 Maps & Weather $(52/360) \downarrow 5$.

Site owners also are concerned with the maintenance of their websites so 4 of the 5 top 10 <u>Site owner and administrator orientation modules groups</u> are still in Top 10 and 2 of the 4 modules group get more weight. The other 3 [8 Contacts & Feedback (98/228) \uparrow 11, 9 Core Enhancements (87/186) \uparrow 13, 10 Directory & Documentation (78/169) \uparrow 16] are new in Top 10.

It shows again that the modules based system is sensitive to the end users' needs. Compared to the module developers, site owners have a rather similar instinct about what is needed by end users but the instinct is somewhat diluted than that of module developers.

Section 5.5 The distribution of The commercial active Modules

In this section we will explore the commercial active modules -the wildly popular commercial modules.

Convention of the next table: Activity shows the rank of the group at Section 5.4 The distribution of The active Modules ----the site owners' attitude. The commercial Active M shows the rank of the group comparing with other groups by only counting commercial Active modules. Commercial Active M Number shows the number of commercial active modules in this group. All active M shows the number of all active modules of the group. The Ratio means Commercial Active M number/ All ActiveM

4↑ shows the group is ranked as No. 4 at the commercial Active module rank compared to the group rank as the whole number of Activity modules which include the Active commercial and non-commercial modules, its rank has increased by four positions.

The whole table shows the rank which is based on the number of Commercial Active Module Number.

What do we find in this table? We find that the E-commerce group has jumped from its rank from 11 to 4. Vertical Markets group also jumped its rank from 22 to 8. The 2 groups have a strong focus on the commercial aspect which shows that the commercial module developers have a strong profit orientation. The Communication group also jumped six ranks from 15 to 9. The communication group requires advanced programming skills. It shows that the commercial module developers are willing to take on the more challenging areas of web computing.

The top 3 positions did not change much but profit orientation groups have more weight at the commercial active modules than the whole active modules.

Figure 5:

The statistics for ratio of commercial active to all active modules in each extension category 70

Activity	Commercial	Group name	Commercial	All	
	Active M	3	Active M	ActiveM	
			Number		Ratio
2	1	Photos & Images	54	206	26.21%
1	2	Social Web	42	259	16.22%
3	3	News Display	42	204	20.59%
11	4↑	e-Commerce	39	76	51.32%
7	5个	Structure & Navigation	35	121	28.93%
5	6	Access & Security	31	143	21.68%
8	7	Contacts & Feedback	31	98	31.63%
22	8↑	Vertical Markets	30	48	62.50%
15	9↑	Communication	24	64	37.50%
10	10	Directory &	24	70	20.770/
	111	<u>Documentation</u>	24	78	30.77%
14	11	Calendars & Events	21	66	31.82%
12	12	Multimedia	19	74	25.68%
13	13	Ads & Affiliates	19	74	25.68%
4	14	<u>Site Management</u>	18	153	11.76%
6	15	Style & Design	16	125	12.80%
16	16	Clients & Communities	16	60	26.67%
19	17	Content Sharing	16	51	31.37%
18	18	Maps & Weather	15	52	28.85%
23	19	News Production	15	48	31.25%
9	20	Core Enhancements	12	87	13.79%
24	21	Search & Indexing	11	41	26.83%
27	22	Sports & Games	8	29	27.59%
28	23	Financial	8	19	42.11%

⁷⁰ Collect and count Raw data from http://extensions.joomla.org/

17	24	Living	7	59	11.86%
26	25	Tools	4	31	12.90%
29	26	Migration & Conversion	4	16	25.00%
20	27	Editing	3	49	6.12%
25	28	Administration	3	34	8.82%
32	29	Miscellaneous	1	10	10.00%
30	30	Mobile	1	13	7.69%
31	31	Hosting & Servers	0	11	0.00%
21	32	Languages	0	49	0.00%

The table below shows ranks based on "Commercial Active Modules /All Active Modules ratio."

It only shows the groups whose Commercial Active Modules /All Active Modules are bigger than the 25% List (18 of 32 groups are over 25%).

It shows that Vertical markets, E-commerce and Financial groups are the top 3 when we count the commercial active modules ratio to the all active modules.

It is also reflected that the commercial module developer focuses on the profit orientation area. The communication is ranked 4th, as reflected in the previous discussion of the last table regarding the challenging areas that demand highly skilled module developers

Figure 6: The statistics of the ratio of active commercial active to all active modules in each extension category 71

	Module Group	Commercial Active M	Non- Commercial Active M	C/All Active M
1	Vertical Markets	30	18	62.50%
2	e-Commerce	39	37	51.32%
3	Financial	8	11	42.11%
4	Communication	24	40	37.50%
5	Calendars & Events	21	45	31.82%

⁷¹ Collect and count Raw data from http://extensions.joomla.org/

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6	Contacts & Feedback	31	67	31.63%
7	Content Sharing	16	35	31.37%
8	News Production	15	33	31.25%
9	Directory & Documentation	24	54	30.77%
10	Structure & Navigation	35	86	28.93%
11	Maps & Weather	15	37	28.85%
12	Sports & Games	8	21	27.59%
13	Search & Indexing	11	30	26.83%
14	Clients & Communities	16	44	26.67%
15	Photos & Images	54	152	26.21%
16	Multimedia	19	55	25.68%
17	Ads & Affiliates	19	55	25.68%
18	Migration & Conversion	4	12	25.00%

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The above data shows that <u>the commercial module developers also follow the trend of meeting end user needs.</u> At the same time, compared to the non-commercial module developers they are focused on the areas which help site owners to make profit or business sites.

Section 5.6 The distribution of The Popular commercial active Modules

The modules which are marked as popular at the Joomla community are most accepted and rated modules among the whole modules.

Most Popular Commercial Modules / All Most Popular Modules indicate the leading category of commercial modules.

Figure 7: The statistics of the ratio of commercial-popular to all popular modules in each extension category 72

	Commercial	Non	all popular	C/All Popular
	-popular	commercial		
		-popular		
Style & Design	2	1	3	66.67%
Vertical Markets	3	3	6	50.00%
Calendars & Events	4	6	10	40.00%
Access & Security	3	8	11	27.27%
Contacts & Feedback	6	16	22	27.27%
Core Enhancements	1	3	4	25.00%
Social Web	4	17	21	19.05%
e-Commerce	1	5	6	16.67%
Directory &	1	5	6	16.67%
Documentation				
Site Management	1	5	6	16.67%
Communication	1	6	7	14.29%
News Production	1	7	8	12.50%
Structure & Navigation	1	11	12	8.33%
Photos & Images	4	54	58	6.90%

The popular module distribution data shows that the commercial module developers can get positions in the areas which require advanced skills, security-related aspects and business orientation. The business websites are always willing to pay money to make their sites user friendly (Style & Design, Calendars & Events, Contacts & Feedback), profitable (Vertical Markets), secure (Access & Security) and stable (Core Enhancements).

From "Commercial Active Modules /All Active Modules > 25% List " we know that 18 of 32 groups are over 25% and commercial module developers are focused on the highly skilled, security and business orientation aspects while non-commercial module developers do not have such a strong focus. Thus, commercial module developers do contribute high quality code and are an important supplement in the business area. Their significance and influence cannot be neglected while the non-commercial modules can still take position in each area. The Commercial Modules have not blocked the path of the development of Non-commercial modules.

The specific function rank of module group is in my edited Excel file and provides an in-depth loo

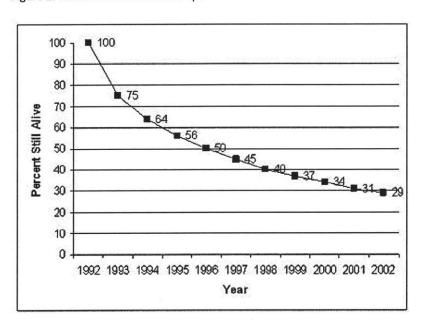
⁷² Collect and count Raw data from http://extensions.joomla.org/

Conclusion

1 Gather the penguins in Rich Countries

Almost half of all start-up companies cannot survive for more than 3 years.

Figure 1: The survival rate of start-ups 73



There is a high incidence of mortality at the beginning of a company or even a human life. As a start-up you have very limited resources. The longer your money can last, the higher the possibility that your start-up will survive. Therefore, the best strategy to save money and manpower is to market your project as an open source project and invite more people who share the same interest as you and have the necessary skills to join. Some low-income countries have plenty of engineers that are not well-paid. It may seem attractive, but it is not advisable to use the above strategy unless you want to hire engineers from these countries as full time employees and pay them a slightly higher-than-local pay that does not put a huge financial burden on you.

Almost no one will work without pay when they are facing financial hardships. Hiring part-timers will deplete your time and money resources quickly in most cases. I speak from personal experience and found that the excellent engineers I hired were always overloaded in their full time job which consumed

⁷³ Page99, Illusions of Entrepreneurship: The Costly Myths that Entrepreneurs, Investors, and Policy Makers Live by Scott Shane. January 28, 2008

most of their energy in the working day. They just wanted to go to bed when they returned to home. They were less efficient and the quality of their work for my project tended to deteriorate.

Dries and Drupal are good examples for us. You can start your project anywhere in the world, but you need to attract the collaborators from the rich countries where there is high income and a good education system. After establishing your company and a network of powerful partners, you can move to a place where you can gather them and amass your resources. Dries moved from EU to United States and had a reunion with his old USA buddies in Boston⁷⁴ after he raised enough funds and became famous.

2 The passion of developers cannot last long without revenue and profit (Section: Drupal People). The Penguins must make profit in the low end (Joomla Commercial Module) or high end (Drupal Enterprise level Customers) market. The profit will not be distributed well to whole communities if the community forbids the commercialization of modules and try to maintain the illusion that open source software is free.

In my view Both Drupal and Joomla have become matured communities. The Drupal community has formed a powerful group of companies run by the active module committers. In this situation, the newbie is at a distinct disadvantage because his lack of skills and business experience renders him unable to compete with the first generation committers. The first generation module developers profit from building websites using the free modules which were developed by ten thousand developers. To the site builder, the cost is zero except his own devoted time and energies into building a Drupal-based website. In contrast, to most new developers, they have no such experience and knowledge to help them get such business opportunities. They cannot accumulate enough experience and resources to help them grow when the market is dominated by the first generation developers. To first generation developers, they can see a great future for themselves even though they have developed many modules free of charge. On the other hand, second or later generation module developers have hardly any opportunities for growth. Even if they do this just for fun, their incentive is low. The first generation module developers have monopolized the business opportunities of the new members. The profitmaking business of Drupal is concentrated on the top tier of community. It is very dangerous for any community organization to be top heavy.

3 The real Penguins are not the leaders of the community but the companies created by the leaders (Section: Drupal Companies)

As a group, the penguins must help each other. The stronger the partnership is, the higher the survival rate. As the Drupal community keeps on growing, many leaders want to launch their own business separately or with a few select individual partners. But everybody knows that to keep the community growing is the best way to help their own business to grow. With Drupal's growing reputation attracting more and more "high end enterprise level clients", huge profits may be in store for these companies. For example, Acuqia mainly targets the enterprise level client and is very focused on the large scale system market which normally is dominated by IBM-like mammoth companies. To gain more market share,

⁷⁴ http://buytaert.net/moving-to-boston-for-two-years

Acuqia also shares the technology and knowledge to their partners which are named as Acuqia Enterprise select Partners. The action shows that the Acuqia wants to strengthen its group and attack the big companies' market share. They are pursuing the high end market which has higher profit margins.

4 Founders must try to realize the important backend or tool modules by themselves. The normal module developers are more sensitive to the fashionable new trends of the Internet and the theme side of Drupal. (Section: Drupal Modules)

Figure 2

The top 1000 modules distribution of Drupal & the active module distribution of Joomla (2000 modules)

Joomla	number	Share	share	number	Drupal
3 rd	710	36%	21%	204	3 rd
Decent	526	26%	24%	228	Decent
Backend	87	4%	10%	98	Backend
Front end	380	19%	30%	286	Front end
Authority	296	15%	15%	140	Authority

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It is apparent that the Backend group is smallest in both Joomla and Drupal. The Backend module development requires advanced programming skills and the developer must understand the whole system architecture well. This means that the developer must devote plenty of time and energy to develop the backend module in contrast to modules from other groups which are less challenging and time consuming to develop.

From the security perspective, taking control of the backend modules is a smart strategy.

It is also clear that Joomla has grown quickly and is succeeding in clearing the misconception that its third part application modules are weaker and of lesser value than the Drupal.

5 The commercial modules will not be in conflict with the non-commercial modules or corrupt the ecosystem of Open source communities. (Section: Joomla)

The upper level community of Drupal works very well. They have become stronger and stay closer. The only thing that worries me is whether the leaders consider the plight of newbies. By now, these leaders do not need newbies if they mainly target the enterprise level customers. However, without new members joining the community, the community may not last for long. This is especially important when members of the Drupal community find the leaders to be making huge profits while most module developers work like slaves as related to me by one Drupal developer.

From the section on Joomla, we found that the commercial modules require advanced skills and complex design abilities. They are a great supplement for the non-commercial modules. Comparing Joomla, Drupal does not have that supplement power which renders it vulnerable to an uncertain future.

As the companies of the Drupal leaders become more successful, more unpaid individual developers will leave if they cannot get any monetary incentive in the community. To get around this, the community should allow the module developers to sell their commercial modules or Professional version modules. This will allow the developers to have a chance to make profits while leasing a free version of the professional which they would have fun making.

Appendix: A case study of my experience

The personal case study is strongly related to the thesis. We already found that the developers of Drupal in its earlier stages were not sponsored by companies. Projects which rely on volunteers and have limited resources and have a higher chance to survive in a rich country. With the help of volunteers, the project can survive; but to get stronger and bigger, the leader must distribute the profits to penguins which are volunteers or the companies founded by volunteers. Therefore, I want to prove the principles I have proposed earlier in my case study to show that projects of such kind can survive with the help of volunteers who are rich and located in USA. I also want to show that helping the volunteers to receive tangible and intangible benefits from working on the project strengthens their commitment to the project. Furthermore, this case study will demonstrate that by merely conducting research on the data of Drupal or other projects is inadequate for a project to be implemented successfully. My experience has helped me to gain inside knowledge and fundamental principles of forming a start-up. The case is just in the middle of way. I will try to realize the project and to finish the appendix in the future.

Starting from ground zero

When I started to gather my penguins, I thought that the passion I had for my project was the best way to persuade others to join my team. Unfortunately, I found that this zeal could only attract those who have a similar passion for my field of interest. Most of the time, I met people who seemed to be more obedient followers than truly passionate pioneers. My only consolation was the knowledge that it is a rare fortune to have everyone in your team who are pioneers.

What about the role of charismatic and capable leadership in attracting project partners? Charismatic leadership is impactful especially in well-organized companies or large corporations. The leadership factor is always built on the basis of hierarchical power and is not particularly applicable when one is building a team from nothing.

If passion and leadership alone were not adequate pull factors to attract people to join my project team, what was the X factor that allowed me to attract the right people to build a successful team? I have found that by adhering to a formal dress code, I was able to give a good first impression as the leader of this project. One should not assume that the casual style of dressing which is so ubiquitous among the geeks in Silicon Valley can attract more people to one's team. Instead, dressing like a successful executive helps me to reflect a serious, business-driven attitude to potential team members. While sharp dressing only helps to create a favorable first impression, the theoretical knowledge and strategies I had acquired in school were waiting for the chance to be manifested in real life applications.

So what is the best way to start your project and implement your business plan?

In my mission to look for potential partners, I have spoken to many people who had expressed interest in my project and verbally consented to lend their support. Ultimately, none of them provided any tangible help. After trying various methods to get people on board with my project, I have found that my

friendships and having a multimedia publicity feature for my project were the most crucial pillars that enabled the foundations of my project to be laid.

Since my project is an internet media project, I first had to find a host to run the project. I met potential hosts and shared my ideas for implementing the project with them. I gave many impassioned speeches to convince them about the value of my project. Most host candidates showed interest in my project, but all expressed that they would only commit to it after they have seen more progress of the project.

I was always asked the following two questions:

- 1 How many people are in your team?
- 2 How is your project funded or sponsored?

From the nature of these questions, I perceived that they doubted my abilities to run the project successfully. I found that the time spent meeting potential partners was wasted as almost everyone I met asked the same two questions. I could tell that their commitment towards my project would not be high. Thus, I decided to put a halt to these social activities to meet potential partners and concentrated on creating a multimedia publicity feature to serve as a communicative platform for my project and my team to attract genuinely interested parties to my project. I wanted to use video and or a photography portfolio to showcase the project so as to attract more people to join my team.

The friendship advantage

I had bought an expensive SLR digital camera which cost USD\$1700, but I did not know how to operate it. I then remembered that Yuanwen, my classmate from SDM, was very knowledgeable about operating such devices. Yuanwen then referred me to his friend Mingwei who owns a state of the art audio-visual studio with professional equipment and facilities. Mingwei is a PhD in biology who just happens to be a great portrait photographer. After a call by Yuanwen to Mingwei, my team suddenly has grown to a 3-person team, consisting of two experienced photographers with unlimited access to professional camera and lighting equipment. Friendship was indeed helpful when one lacks funds.

My friend, Jeff (nick name), had graduated from MIT with a PhD in course 6. He knows the Chinese community in Boston very well and I thought he would be able to help me gather lots of people for my project. However, his active social lifestyle which included dating many women at the same time posed a threat to the reputation of my project. While I disagreed with his lifestyle on a personal level, I needed his help at this stage where I was just starting out and lacking in funds. At last, I decided to include him in the team and tasked him to gather more people to join the project. As the fourth member in my team, Jeff had proved to be a wild card. Since he was busy with his full-time job, his own start-up and his personal life, he had contributed little to the project in tangible aspects. However, he had always given me valuable information that enabled me to gather people for my project. Through his many party invitations, I got to know a few of my team's future members who played key roles in the project's success.

Then, my project began implementation stage. The fifth member of my team was Yingying, a beautiful professional TV host who was a regular on the Hunan Province TV Channel and had attended the New York Parsons New School for Design. I contacted her through her Facebook account and invited her to be our host for an event as part of our project and to have her model in photos taken at our studio to be used as promotional material for our project. She recognized at once that the studio facilities and equipment used by our team was of professional standard and she was happy to come on board as a team member.

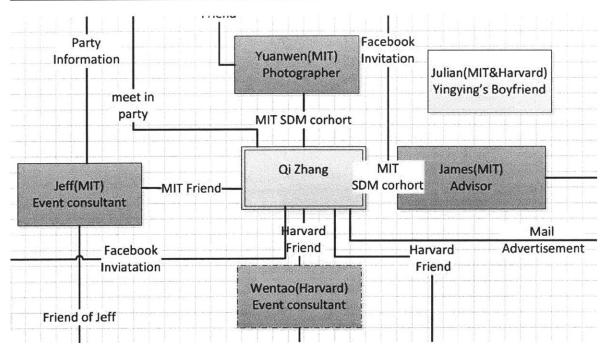
I found out from Yingying that her boyfriend graduated from Sloan with an MBA. He manages a fund worth millions of dollars and was looking for an IT system to help him operate the fund better. I introduced him to James, one of my friends from SDM who specializes in this field. Helping her boyfriend through the introduction of James helped to solidify the trust between Yingying and me which added to the general cohesion of the team.

As the team's wildcard, Jeff later proved useful when he gave me information about a Chinese cultural event at Boston University where we decided to meet. Actually I had no concrete plans for that event and I just wanted to hang out with Jeff and get some advice from him. However, at the event, I met a very attractive young lady, called Guoshuang. Putting aside my usual reserve when talking for the first time to women I am unacquainted with, I boldly introduced myself and my project to Guoshuang and invited her to be the promotion ambassador for my team. Surprisingly, she agreed to be the sixth member of my team within a few minutes of my meeting with her. I could hardly believe my luck at finding someone so beautiful and accomplished to be my promotion ambassador!

Jeff also introduced Zhenhua to me at a Harvard event. Zhenhua specializes in party planning and event organization and often serves as a stage director. While he did not accept my offer to join the team immediately, he said he would decide if he saw more progress from the project.

I also spread news of my project among the Chinese communities in several universities around the greater Boston area. From this publicity effort, Yuting of Umass and Xinxin of Brandeis contacted me. They show interest in my project but were not yet keen to commit to the team. They doubted my ability and asked the same two questions asked previously by the skeptics I first approached. It was time to provide something tangible that would earn their trust and belief in the project.

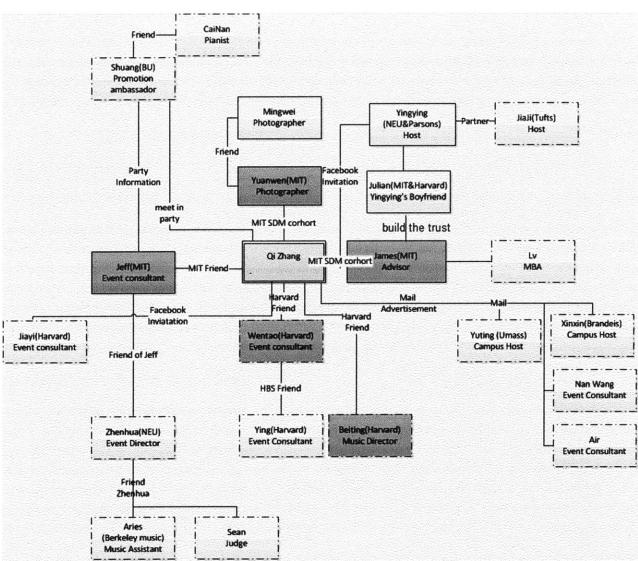
Friends who helped me build the project from scratch



The MIT and SDM advantage

From an overview of my relationship map, you can find that all my friends are from MIT and Harvard. This would not have been possible if I was not admitted to MIT. MIT not only provided me with the necessary knowledge and strategies to help me formulate and implement my project but also the platform to network with others from some of the top universities in the world. SDM provided me with access to lots of resources and saved my overhead costs by sponsoring my project. Also, SDM Director Pat had helped me rent an event space in MIT. I am so grateful for all of this help without which the event would not have expanded to what was. It is indeed my great fortune to be here at MIT.

The overview of relationships in my team



The role of multimedia publicity for our team and our project

Just as I pointed out in the above, I knew that interested potential partners would remain as mere observers and would not commit to the project until they saw some tangible proof of our capabilities as the core team.

I decided to partner with Yuanwen and Mingwei and got them to take professional photos of Yingying as part of our promotional materials for the project.

I also took a High-Definition video to record the whole process of the photo shoot. We edited the photos and a video showcasing our team's vision for the project and the team members in action into one set

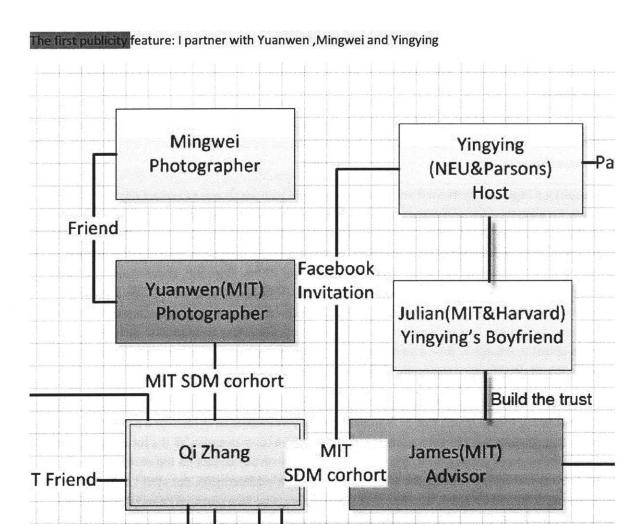
portfolio. This was the first piece of evidence that demonstrated our capabilities as the core team. From the quality of the photographs and the great studio facilities shown in the video, one would be easily impressed by the dedication, professionalism and capabilities of our team in this short publicity feature for our project.

When people saw the videos and photos, no longer were the previous two questions asked again. The evidence of our strengths as a team and the resources we had made it clear we were a business team that would deliver results.

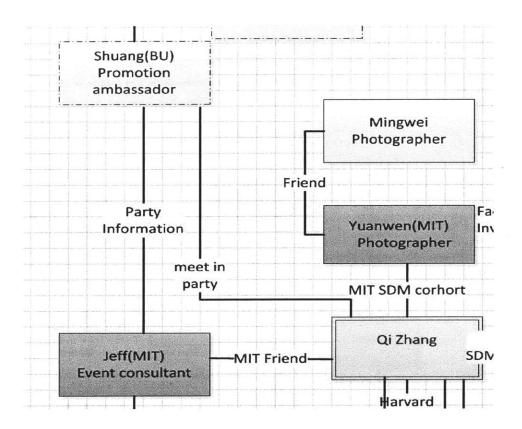
The auspicious beginning motivated me to take the second step which was to invite Guoshuang to the studio to for a photo shoot and video recording. Guoshuang is very confident in front of the camera and knew the exact image we needed in a promotions ambassador. Everything went smoothly. It was very easy to work with both Yingying and Guoshuang as they possess charming manners and an elegant deportment, befitting of their wealthy family backgrounds in China. From this, I have discovered that there are many advantages of working with team members who are already rich and are not hard-pressed for income. They do not demand to be paid, and can afford to choose projects based on their interest and inclination. People like Yingying and Guoshuang are willing to cooperate with me because they can afford to indulge in their own interests and focus on building their reputations through this project without demanding a salary since I had no money to pay them.

The converse is also true. Take for example my team's experience with Lu, an MBA student who was introduced by my friend, James Xiao of SDM2007. James was helping Lu to look for a proper job and knew that Lu was also keen to participate in a start-up. I gave Lu an overview of the future of our project and she showed much passion for it. She was willing to work on our project on top of other commitments such as her ongoing job search and a non-salaried internship. But after I assigned her a task, she never turned up again. It is clear that such persons who face personal financial constraints have little motivation to do something that does not provide a salary or a stepping stone to a US job visa. This is also true from my research on the Drupal model. People with low incomes will not devote their energies and time to a project which they cannot profit directly from although they may feel the project may be a worthwhile one.

So I decided try to find partners for my project who are not limited by financial obligations and constraints. Armed with the publicity feature which starred YingYing and Guoshuang, I headed online to spread the word of my project via the social network.



The second publicity feature: I partner with Yuanwen, Mingwei and Guoshuang



The social network influence

The social network is not just for friends. It is also a great tool to spread publicity for projects and businesses. It is much cheaper than traditional mainstream media. The only thing you need to do is to create really amazing content that captures the hearts and imaginations of people. This is an effective and low-cost form of publicity that is heavily content-driven.

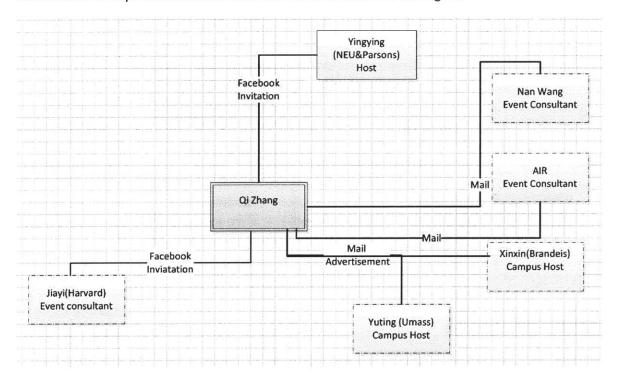
I tried using internet-based social networking to publicize my project by creating a Facebook group. Unfortunately for someone like me who rarely has time to spend on Facebook, I had only 60 friends in my Facebook account prior to launching my project online. I quickly added lots of friends of my friends in my Facebook account, and in just two months I increased my Facebook (Chinese account) friends from 60 to 490. I then quickly added all my friends to the Facebook group I had set up.

Thus, 390 members were added to my project's Facebook group at the beginning. However, the number of group members soon dropped to 380 in a short time. I became nervous and afraid that my project would not be well-received. Thankfully, the number of group members quickly became relatively stable at around 360 members. This assured me that people actually like the whole conceptualization of my project.

So what happened? I became a famous person within the Boston Chinese community in a short time after releasing just one picture and creating one Facebook group. Subsequently, many people I met for

the first time told me that they knew of me and my project. When I sent a promotion through a 700-member e-mailing list, I received only 50-70 visits on my page. This is in contrast to the 400 visits I received on my page after I released a picture on Facebook. Indeed, the evidence of the power of social media cannot be denied.

I collected some important members from both Facebook and the e-mailing list.



The importance of keeping in contact with potential stakeholders

There are many people who like to remain on the sidelines and prefer to watch your progress before they decide if they would join your team. This is reasonable because many people are risk-adverse and will naturally be reluctant to join your team if they see that the project has little chance of success or that the team comprises of members that do not inspire confidence.

Thus, it is important to remain in contact with these people and provide them with continual updates of the progress of the project. In this way, they may be more and more convinced by the value of the project and would be motivated to join your team.

My friend Mike Li who is an MIT student launched a solar technology start-up. Mike is good at publicizing his start-up when he attends social engagements. He is well-connected with influential people and elite students. At the beginning of Mike's project, many people thought he had a good idea for a solar technology start-up but no one was willing to contribute tangibly to his project. However, Mike was unflagging in pursuing his course of action and worked alone while always giving continual

updates to others on the progress of his project. As the development of his start-up flourished, everyone he knew was still unwilling to make an active contribution to his project, but people started giving him advice and information that proved to be very useful. Such advice and information is also valuable and counts as a contribution that we can call **soft action or soft contribution**. Indeed, when a project is progressing well, more and more people tend to like to be involved in it through soft action.

This was exactly what I encountered. I contacted lots of people and most of them held a wait-and-see attitude towards my project. As I gave continual updates of the project's development, I received more involvement in the project from others through soft action. A virtuous cycle then occurs when people see that their advice was well-taken, they tend to want to contribute more to the project.

The importance of regulating meetings

It is imperative that the team leader builds and maintains a good working relationship with each team member. One should not have the first big group meeting too early in the project's infancy. Trust needs to be first built and is the foundation of all working relationships. The first meeting should be limited to a few people who make up the core of the team. These are people with whom you have already established trust and are deeply passionate about the project. This meeting's agenda should not be focused on clearing doubts but on strengthening trust among all team members which empowers the team as a whole. While the team leader may often find himself working alone in the course of the project, he should always seek to facilitate a positive team spirit within this core group of members so that not one member feels that he is isolated in his work on the project.

The frequency and size of the meetings need to be kept under strict control. Too often, as a project develops, the frequency and length of meetings tend to increase and then get out of hand. One must remember that too many meetings may end up counter-productive, with little or nothing accomplished. Several small meetings with the right people involved are more beneficial than one large meeting that may be more convenient but less efficient.

Democracy is not an important factor at the beginning stages of a project. There will be many instances where members want to demonstrate their value to the team during meetings by raising issues and saying things that are unrelated to their knowledge or skill set. They like to give many suggestions but can contribute few if any details as they do not have a clear vision and understanding of the intricacies of the project. Only those who are deeply involved in the project and are familiar with the minutiae of the project should be given greater authority and autonomy to speak.

The importance of utilizing an existing skill set of the team members

It is unreasonable to assign tasks to your team members that will demand a steep learning curve from them. To do so would be to court disaster for your project as the cost of the extra time team members take to master new skills results in a greater cost to your project in the form of extra delays.

This was my learning experience as I gave the two hosts in my team an assignment to work on the design process of a program. However, this was not part of their skill set, and they had no experience or inclination in this field. They were only competent in what they were trained in — being hosts and executing the program. The reality is that people have little motivation to learn something new and difficult when they are doing it without pay. If they are unwillingly forced into such a challenge, they might give up on the project and leave the team.

Thus, it became my strategy to utilize the existing skill set of each of my team members. This means that sometimes I needed to adapt my project to fit their skills. It is vital that the team leader recognizes the unique set of skills that reside within each member and seek to harness this resource for the benefit of the project.

The importance of harnessing the natural talents of the team members.

For a project leader to delegate project assignments, he must not only recognize the set of skills each team member possesses but should also utilize the intrinsic motivations that stems from his team members' natural talents and personal interests. In this way, members will be self-motivated to complete tasks without being ordered to do so. For example, the project provided a way for Yuanwen and Mingwei to showcase their exceptional photography skills when they were tasked to do the photo shoot. Guoshuang and Yingying also got the opportunity to be models in the photo shoot and video recordings which was something that both women have always been interested in. Such work allocation ensures that team members actually enjoy contributing to the project while helping to save time, money and energy spent on hiring professionals for what they actually like to do and were good at.

The power of identity

My project is related to universities. Many of my team members have a strong school identity. In areas of my project that require action that is related to the different universities that my members are affiliated with, I found that they have a strong willingness to promote their school which helps the project to progress swiftly. For example, Brandeis University is rated as the fourth ugliest school in USA. Our team member, Xinxin, who is a sophomore of Brandeis was unhappy when her friends from Chicago taunted her school for its ugliness. Xinxin became quickly motivated to showcase the beauty of her school. She selected many buildings of architectural interest and beautiful views of Brandeis and planned the promotion introduction of her school carefully. Many team members from other universities were similar in this manner and this was a great force in propelling our project's development.

The importance of unilateral decision-making

As mentioned above, as a project progresses from its infancy, more meetings tend to be held with increasing frequency. My friends and I who launch start-ups often face a similar problem during these meetings. The problem is that team members, especially MBA students, like to argue among themselves,

but few actually do anything constructive after the meeting. It is important to note that these arguments about whether option A is better than option B often have little significance to the outcome of the project. People also do not come prepared for these meetings. From personal experience, I have found that team members often turned up for meetings without reading the agenda notes for the meeting carefully. So it is wise not to schedule too many meetings at the beginning of the project as it may be counterproductive.

When meetings are held, it is important that ideas and contributions from hardworking and committed members are taken seriously. Their feedback is more valuable since they are speaking based on actual experiences of working on the project in contrast to contributions made from people that work on the periphery of the team. Ultimately, the founder who knows the entirety of the project better than anyone else must be firm in his decision-making after considering the various opinions and arguments raised during these meetings.

I have also found that my work experience and background in a fortune 500 company did not prove to be advantageous in this project. Working for a fortune 500 company is vastly different from working in a start-up or a project of this size. People who have work experience in a mega corporation tend to give many suggestions during meetings without thinking of their consequences because the resource-rich company would have the means and other manpower to execute their suggestions whether good or bad. In a small start-up setting like ours where resources are limited, superfluous suggestions have no place in these meetings since every suggestion taken seriously would end up being implemented by the entire team. The reality is that small start-ups have limited resources which present a challenging situation that not all MBA holders can appreciate.

After my friend Mike Li held lots of meetings in his course of forming his own start-up, he found that all the MBAs who have previously worked for famous financial companies or other large corporations were often argumentative during meetings for the sake of appearing committed and devoted to the projects involved. In actual fact, these MBAs did nothing for the company after the meetings. Only one MBA who worked as an engineer before attending Sloan contributed his energies to the company. From his experience, the worst thing about MBAs is that they always argue about trivial matters without fully understanding the context. Whether Mike ultimately chooses Person A's or Person B's way of doing things, most of the time, the end result will not make much difference to the company. Arguments always waste time and energy. In fact some members choose to attend meetings as a way to show their contribution to the company because attending meetings is most convenient and is of a lesser energy cost for them. They can also find out about how much progress the start-up has made during meetings and whether it has a chance to be lucrative.

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