

Chapter 1

Introduction - free

Personal and general perspective, channel for creativity, how will this ebook help you, as it was and is. Open Source software project, part time over a number of years, extracting what worked, what did not work, tools for collaboration and their respective strengths and weaknesses. Communication methods. Context of DIAP and DIASER. Media types including paper. Gain deeper insight into the collaboration process. Can't win them all. Partner Myles suggested I write this while taking a break after the JISC funding period.

This ebook is designed to help you gain some deeper insight into a small scale, technical Open Source software development collaboration. Perhaps you, the reader, have started, or are part way through, a project; or you are a manager or investor wanting to dig a little deeper into the inner workings of Open Source software development. As the designer, developer and author of a project I recently completed a stage of collaboration that took the software from a prototype to a beta-1¹ evaluation product. I'll be talking you through the stages of development from initial conception to beta-1.

Footnote about footnotes² The next two paragraphs describe the software project which led to the creation of this ebook. I won't go into any more project specific technical detail beyond these.

¹Beta is part of the software release life cycle terminology.

²For more information about footnotes in this ebook please see the links section at the end of every chapter. The exception is this chapter, in which case please see the end of chapter 2.

DIASER³ stands for Distributed Internet Archiving System for Educational Repositories. It is a highly resilient software system which uses Linux as the underlying platform. The system is designed to provide low cost, robust long-term archiving and is known as an Open Source data vault application. More details can be found by following the links in the following chapter if you are interested.

DIASER is the result of DIAP, Distributed Internet Archiving Protocol. Taken from the IETF⁴ Internet draft abstract; *“DIAP has been created to solve mid-range and below, long-term archiving requirements of the small-medium enterprise. Where tape has been deployed in the past, DIAP now offers an alternative solution designed to be more robust and manageable in the long term than network attached storage devices or simple disk storage alone. The system provides a well defined structure for storing and managing long-term archives.”*

Why “Walking With the Elephants”? Elephants are synonymous with memory, wisdom, strength, longevity and patience. All collaborators have, or need these attributes, like elephants, so to emphasise the importance of good communication. DIASER is about storing memories in the form of archives. Interlinux Ltd is a very small organisation, so we try not to become overwhelmed, to stay in sight whilst at the same time, not get in the way. A little like a safari, where we all work and walk together to help each other in the search for food and water or, in other words, resources. A safari, where the Open Source GNU (Wildebeest)⁵ is a player.

From now on I’ll use the acronym WWTE to refer to this ebook.

My business partner and brother-in-law, Myles, suggested I write this book a few months ago when I mentioned I was planning a trip in the Balkans, going via Dubrovnik to Athens by train and bus to wind down after completing a crucial

³Pronounced; Dye-Sir, (with a silent A).

⁴IETF is the Internet Engineering Task Force whose goal is to make the Internet work better.

⁵Is a recursive acronym that stands for “GNU’s Not Unix”.

development phase. “What?” I thought. “I’m exhausted, I just want to soak up the last of the European sunshine!” However, now two weeks in and I’m enthusiastic about writing WWTE.

I’d like to use the planning of this trip as an analogy for the way the DIASER development project, both generally and specifically, unfolded. I had a loose plan: to rest a few days in Dubrovnik then take buses and trains through the Balkans to Athens.

A colleague found me a value one-way flight a few months ago when I mentioned I wanted to take a break after a funding period was over. My brother, Richard, also an Interlinux Ltd partner, sketched a trip in a spreadsheet which he had undertaken himself in 1996. With no forward bookings I took the flight in good faith and set about my adventure.

I found the right buses and trains, after a fashion, but took a pragmatic attitude and while waiting four hours for a bus, outlined WWTE. Now, after a few thousand miles of an uncertain but exciting trip, I am writing this from a comfortable hotel room in Greece.

The trip was rather like the development of DIASER: I was never sure exactly where the project was heading, but had a general plan. I waited for opportunities to make progress but at times had to wait and the details of the next steps were not always certain. The trip, on Facebook, where I regularly uploaded photographs, looks carefully planned. As you know it wasn’t; read on...!

I will now describe the project, on which this ebook, WWTE, is focused, to discuss the bigger picture. I shall also describe the journey I took to help you put what happened in context.

In 2005 I was working as a systems administrator with a non-profit organisation, which had a main central site and several external sites. My role was to ensure IT communications ran smoothly and communication tools such as email



Figure 1.1: Engineering a safety system - DIAP®.

were in place. As these sites were spread out I frequently copied sizable amounts of data between sites over the Internet connections and was involved in significant collaboration with various organisations. DIAP and DIASER development is an extension of these activities.

I'll now talk more about how these file copies became a software development collaboration and the essential role Myles and others played in this transition. DIAP and DIASER are the architecture and resulting software. I will not go into much technical detail here.

The current target market is higher education but I envisage a commercial user base in the future. The software is beta-1 and available under GPL licensing terms⁶, the most popular, free (as in *libre*), Open Source software licence model for trial and evaluation.

Here I have attempted to put down in an organised way a stream of conscious-

⁶The GNU General Public License, GNU GPL or simply GPL, a powerful copyleft licence originally written by Richard Stallman.

ness drawn from my experience so you, the reader, can take what you need and refer to WWTE in the future. It is not a manual but a toolkit that can be pulled out of the box when needed. Each chapter attempts to describe the stages of development and are titled in such a way as to lead you through the journey.

Like the trip I have just taken, the details of each stage were not pre-planned but the overall aim of the development was known, that is to develop archiving software. The project also served as a channel for creativity and a way to capture and focus ideas as they occurred.

WWTE attempts to capture and extract the essence of the collaborative process and how the interaction of this with the technical development process evolved, each driving the other. The project was started in my spare time in 2005 and then became paid work for six months during the summer of 2009. The project has experienced periods of accelerated growth, resting, intensely uncompromising growth and steady coding grooves and will continue like this. A pattern has evolved and the chapter titles reflect this.

I will describe the collaborative tools I used;

- Modern software communication methods
- Web 2.0
- Traditional methods like paper, meetings, both informal and informal
- Media types including paper and their strengths and weaknesses
- What worked and what did not work
- What was useful and what was not useful
- Collaboration pitfalls that were discovered
- Unexpected benefits and wins
- How making your own luck is key to success

- Importance of learning from mistakes equally important

I want you to get a feel for the heuristic and iterative process and at the same time, point out where the project fell into some more formal methodology constraints almost by magic. Well, perhaps not magic! as you will see later. Therefore I am describing an unorthodox process, and capturing a complex process, which allows efficient use of existing resources mixing pragmatism with intense creativity while still remaining whole in the following chapters.

Chapter 2

Share the idea I

From one to two, check competition, how unique is the idea, initial cash and time investment. How much time to devote or not. Right place right time and making opportunities for luck.

Myles and I were helping my sister-in-law with some house restoration, laying garden patio slabs and technical conversation sparked into life. He knew of my work in the non-profit organisation and together we wished that robust off-site archiving was available cheaply, yet, for a number of reasons, not through a data-centre. We wondered how we could achieve this with the resources we had.

(Myles is a management consultant with a technical background. My current Open Source, Linux system administration, systems deployment, technical and design skills and Myles's gift for matching skills to resources started the whole thing off.)

Myles offered me £1500 so I could buy three servers. I took up the offer and I set about building and siting the servers, designed to archive data between three different geographical locations. I named the servers Holly, Harry and Herbert.

To make this a meaningful technical exercise we used real data and offered the the use of this storage facility to family and friends. I used file transfer protocol

(or FTP) and other semi-automatic systems tools. This experiment was so useful to me as I developed my technical skills which was of direct benefit to my day work and ultimately helped me attain Red Hat engineer certification in 2006.

Myles and I hoped the project might go either one of two ways over the next few months. It could become an ISP data storage service with paying customers, or evolve into a software development project - in other words, distilling all we had learnt from running the project thus far into a piece of Open Source software. Quickly the project moved towards software development.



Figure 2.1: A leap of faith.

I devoted quite a bit of my free time to building, adding to and maintaining the servers over the next two years. We had begun creating opportunities for luck. I enjoyed the technical activity and Myles enjoyed learning about the latest systems software and techniques, we had a darn good backup system too!

I was doing this because there was no existing system capable of providing the manual service I, with Myles's feedback, had initially designed. Ah, so here is something unique and worth perusing. This uniqueness, the use of inexpensive

hardware and powerful Open Source software, led me to develop the idea and devote more time to it. All the software used was installed from a Linux¹ operating system distribution and I mainly used the Red Hat community offering, Fedora. The Fedora team allowed me to use their logo on the DIAP development website.

If another system had become readily available I would probably have stopped and used this, but it had not and still has not. So I was happy to devote more time than perhaps I had initially planned.

¹“Linux” is derived from the Linux kernel, originally written in 1991 by Linus Torvalds.

What worked here:

A shared interest and passion, for technology, a good rapport with Myles, a good degree of trust between us and a relaxed, non pressured approach of discovery and learning. We could dip into and out of the project when we had the time and resources.

Collaboration tools used:

Email, telephone and Facebook.

What did not work here:

Were attempts to stick rigidly to any particular plan, so I didn't.

Links:

[DIASER®](#)

[DIAP®](#)

[Linux, Wikipedia](#)

[Fedora](#)

[The software release life cycle, Wikipedia](#)

[Free Software Foundation](#)

[A Quick guide to GPLv3](#)

[The Internet Engineering Task Force](#)

[SquirrelMail](#)

[Facebook](#)