# How I Learned Things and Influenced People with Visual Notes

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## Abstract

High tech technologies and skills constantly change. In this whirlpool of new ideas, do you find yourself sometimes underwater -- struggling to organize the maelstrom of new information? If there were only a way to process information as you hear about it and organize it into accessible repositories for reference.

This was a problem that Moss Drake experienced until he discovered the practice of visual note taking or Sketchnotes. Sketchnoting is a method for taking notes that uses visual, kinetic and introspection to reinforce learning. Drake has ten years of experience using notes to learn and share discoveries from work, conferences, and meetups.

In addition to providing a way to take more effective notes, Drake has discovered a side benefit: sharing notes with communities is a way for a self-professed introvert to overcome barriers in networking, collaboration and communication.

## Biography

Moss Drake has over three decades of experience developing professional software with a focus on healthcare and insurance. He has a passion for improving team communication, discovering innovative ways to deliver software, and using agile methodologies. In addition to volunteering and being on the board of several organizations such as the Pacific NW Software Quality Conference, The Flying Focus Video Collective and Hack Oregon, Moss enjoys playing music, traveling and drawing.

# 1 Introduction

Communication is hard. George Bernard Shaw observed that "the single biggest problem in communication is the illusion that it has taken place." In English we often use words imprecisely, and even when used correctly, simple words may have multiple meanings. For example, the Oxford English Dictionary cites over 600 meanings for the word "run." (Winchester 20111)

Yet, software development is all about communication. Peter Naur, of Backus-Naur notation fame, wrote an essay called "Programming as Theory Building" that says "…programming properly should be regarded as an activity by which the programmers form or achieve a certain kind of insight, a theory, of the matters at hand." (Naur 1985 ) In my experience, agreeing on this theory is half the difficulty in developing software. The key to success is having a shared theory.

According to Karl Wiegers, "If you don't get the requirements right, it doesn't matter how well you execute the rest of the project...High-quality software development is based on high-quality requirements, elicited from the right people, crafted into usable forms, and clearly communicated to everyone who needs to know." (Wiegers 2021) A survey in 2018 found that 59% of U.S. workers say communication is their team's biggest obstacle to success (Conrad, Andrew 2018). Others have claimed that communication is "the nervous system of any organized group and the glue that hold organization together" (Weldearegay 2012). Given that, how may we improve communication chances for success?

Using alternate modes of communication can help improve alignment. In my career I have often leaned on drawings and diagrams to supplement written and verbal communication. Thus, I was primed for adoption when I discovered Sketchnotes, a framework for visual note taking. By using Sketchnotes, I have had a surprising number of benefits beyond improved communication

# 2 The Challenge

In the technology arena there are a lot of new concepts to learn. Some are fleeting, like Windows 8 Widgets or Facebook Home (aka the Facebook Phone) and others, like Java persist. Further still, some evolve over time and suffer obfuscation by marketers and opportunists. Regardless, technical presentations have a lot of details - It can be confusing to process and prioritize. In a swiftly changing environment, how much time should one spend on any topic?

A simple solution is to keep outlines of notes on various topics, with blocks of details when needed. Even so, notes can be forgotten or duplicated. Writing notes can become rote, so much that one ends up typing, verbatim, the details from the speaker, website or book. While written notes are searchable, they are dense to read or to quickly scan.

To further exacerbate the problem, many in the software industry are introverts, which means they find talking with people to be draining. Introverts may also find it difficult to initiate conversations. In a meeting or conference I would much rather follow my internal dialogue than to have one with a person in the room. Getting a dialogue with multiple people is sometimes not only tiring, but often unmanageable for complicated topics.

If only there were some way to organize ideas quickly to be memorable, quick to scan, easy to share and facilitate collaboration. This is my journey in discovering the benefits of visual note taking.

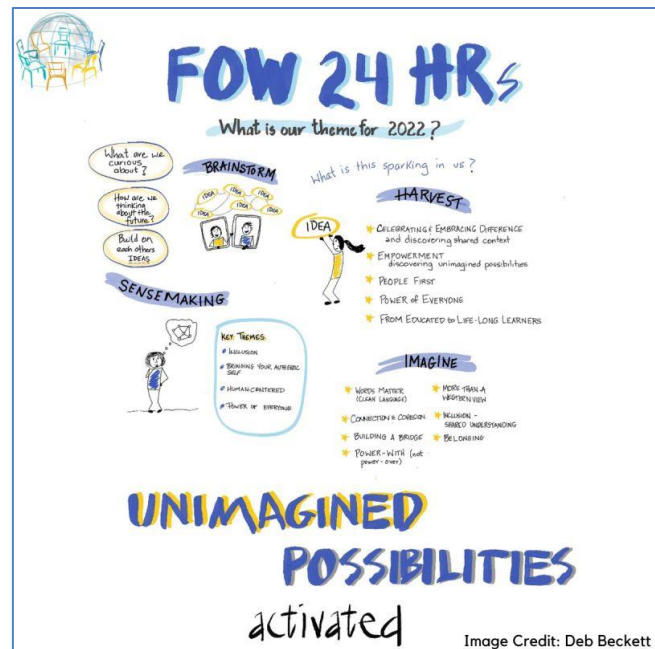# 3   Discovering Sketchnotes

In 2010 I was sitting near a person at a conference. While the keynote spoke, the person used an iPad and a stylus to record their impressions of the presentation. I watched in interest as they combined symbols, text and quick doodles on the tablet to take notes of everything the speaker covered. Afterward, I spoke with Erin Dees, who was recording the session. They were using an app called Paper to record the Sketchnotes of the keynote.

While familiar with the book *Visual Meetings* (Sibbet 2010), this was my first inkling of the scope of possibilities using drawings for taking notes. Erin referred me to Mike Rohde's book Sketchnotes (Rohde 2012), which led to a number of simple concepts to get started.

The premise of Sketchnotes are

- Combining icons, drawing and text together to quickly document a topic
- By using multiple modes of thought, different parts of the brain are activated which helps store and process the concepts
- Similarly, whoever reads the notes also gains the benefit of triggering multiple pathways in the brain

The remainder of this paper discusses three cases of using visual note taking that improved communication and achieved other benefits.



*An example of Sketchnotes by Deb Beckett for the Future of Work (FOW) Conference*

# 4   Case 1: Learning

I began by using Sketchnotes for my own personal reference. When attending a talk or a conference I would bring along my iPad, stylus and an open mind. There are several things that occur when getting ready to document a talk that reinforces learning. Looking up the author and the title of the talk, then writing it down in the upper left corner is a good way to internalize the information. Taking a minute before the talk begins to illuminate the title and author reinforces retention.

In the book, Mike Rohde suggests several general structures for taking notes:

- Linear
- Radial
- Vertical
- Path
- Modular
- Skyscraper
- Popcorn

Most of these structures are self-descriptive. The Popcorn structure can be thought of as spilled popcorn – a series of small bits of information that are not necessarily in significant order. The Sketchnotes book has numerous ideas for drawing, listening, organizing, and building one's visual processing skills. This paper is not a replacement for Sketchnotes. Rather than focusing on "how," this paper emphasizes "why" visual note taking is valuable.

Drawing engages the brain in multiple ways: visually, cognitively and kinetically, making meetings more creative and memorable for everyone. A Wall Street Journal article began "Employees at a range of businesses are being encouraged by their companies to doodle their ideas and draw diagrams to explain complicated concepts to colleagues." (Silverman 2012 ) Drawing can be used to promote engagement, visual thinking, and enhance note taking.

Studies show that drawing enhances retention. In "Moonwalking with Einstein" Jonathan Foer devotes a chapter to discussing mind maps and how they correlate with memory palaces (Foer 2011). A memory palace is a visual mnemonic device used to help organize and recollect bits of information. As the team works with the image they inadvertently create spatial memory palaces of the system in their minds. Later, when writing code or testing, the image can help clarify details and provide a context within the larger system.



*Detail of Sketchnotes by Moss Drake of the session "Putting Practice to Proficiency" from Agile Open NW 2015*
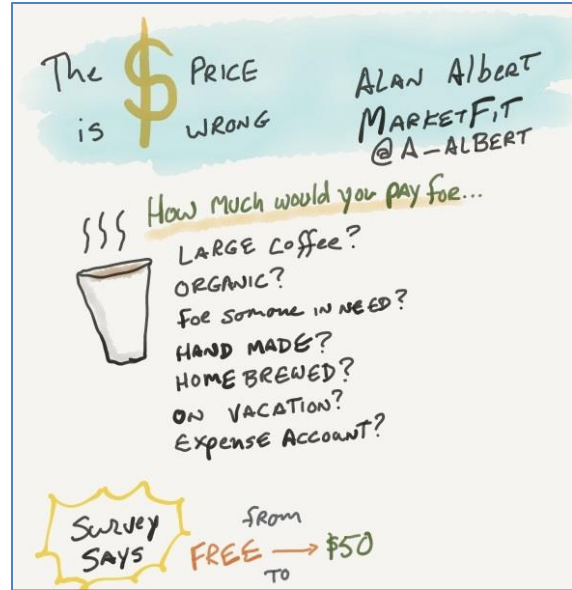
In my own experience, using visual note taking has the same effect. Where once my mind might have drifted during a talk, the process of doodling and translating from spoken word to notes helps with retention. I can immediately recall certain topics because of the drawings associated with them.

*Detail of Sketchnotes by Moss Drake of the session ""Being a Better Product Owner" by Ken Pugh*



*Detail of Sketchnotes by Moss Drake of the session "The Price is Wrong" by Alan Albert at Product Camp Portland*
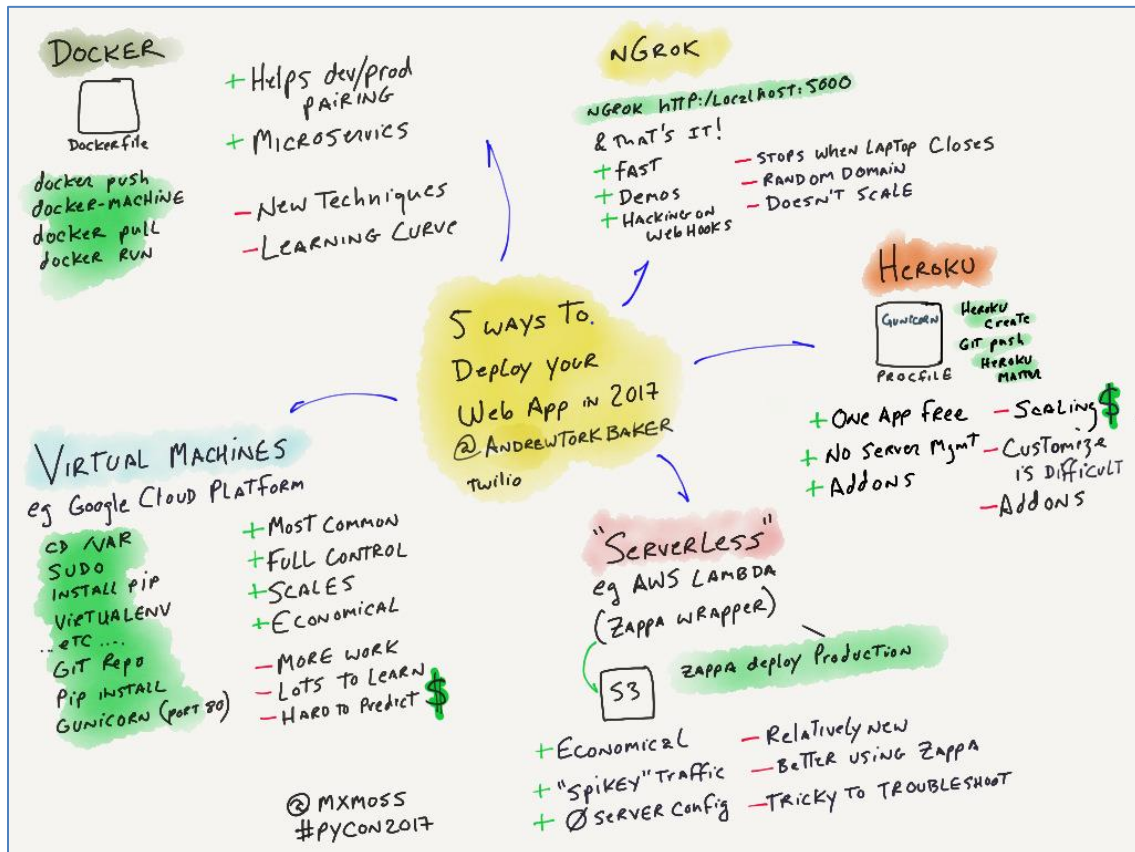
The illustrations on this page and the previous are examples of the *Pricing Discussion* led by Alan Albert at Product Camp Portland in 2019, the keynote on *Being a Better Product Owner* by Ken Pugh from PNSQC 2015 and Matt Plavcan's presentation on *Putting Practice to Proficiency* from Agile Open NW 2015. The coffee cup, the two-faced Product Owner, the pointed haired boss relating to programming, are all images that anchor the discussions.

And, when trying to find notes on a particular topic, it is easier to scan through a series of drawings than to read text. Pictures generally show superior recognition relative to their textual labels: an article from MIT claims that the brain can identify visual cues in as little as 13 milliseconds. I have found this advantage to be true personally as well as when working with others. (Trafton 2014) The end result of using Sketchnotes is improved retention and faster ability to refer to previous notes than when using plain text.

## 5  Case 2: Networking

In 2017 I had the opportunity to attend Pycon and made Sketchnotes of the talks I attended. Being new to Python, many of the talks were eye opening or discussed novel topics and technology. As part of my normal process, I used Paper on the iPad to take notes in real-time and then shared them on twitter with the #pycon hashtag. Consequently, the notes were seen in real-time by many of the people at the conference.

One of the presentations was "Five Ways to Deploy your Python Web App in 2017" by Andrew Baker. The talk had five main areas, so I chose a Radial design for the layout. The topic itself was technical, so it was hard to render most of it as graphical illustrations. Still, the segmentation of the topics, combined with quick checklists and some color highlights made the notes simple to

scan and understand. The tweet received 138 likes and 64 retweets. Andrew Baker, the presenter, mentioned it was "Clearer and more beautiful than I could have ever come up with!" Additionally, the [tweet](#) started a thread about ways to improve some of the deployments in certain cases.

More surprising was the result from the Sketchnotes on Moshe Zadka's talk "Automate AWS with Python," which covered how to automate AMI builds, building Cloud Formation Templates and automating S3 bucket management. In this case, the details of both AWS and Python were unclear to me at the time so it was difficult to be sure how accurate the notes were. I posted the notes after the talk, and soon got a direct message from Moshe asking if he could meet me at 2 pm that afternoon. I began to wonder if something was wrong: did I make a mistake in the notes? Was his talk somehow proprietary? Will he want me to retract the notes from Twitter?

It turned out that Moshe wanted to thank me for capturing his talk in a succinct manner, and he also wanted to point out two things to add to the notes to make them more useful. We talked for a while and I understood the concepts better. As we parted, he gave me a business card and connected with me on LinkedIn.

The bottom line for sharing notes at a convention or on social media: people will appreciate the attention focused on their efforts and will reach out to you to provide more insight. In this case, the "normal" networking situation had been reversed: The person listening to the talk was approached by the speakers and provided with more information without having to initiate any

contact in person. This was a "perfect" solution for an introvert who finds it difficult to begin conversations with strangers in a crowd.

# 6  Case 3: Influencing

As yet, we have examined using Sketchnotes for capturing the gist of a talk. What about using visual note taking for taking notes during a meeting where the topic is still being explored?

One organization I worked for had a bear of a project that had been continually put off: The migration of a key system from a mainframe to a Windows server. The mainframe was expensive, many times more expensive than running a Windows server, and it was aging. The technology was limited and most of the system was written in COBOL. Unfortunately, the system touched several different departments and not a single manager wanted to assume responsibility for the project. I decided to create a shared vision of the project using visual note taking and then we could assess whether to proceed.

The culture of the company was conservative, so they weren't ready to adopt agile methods for collaboration. I decided, however, to take a slight chance and use visual note taking to facilitate a vision for the migration. About 10 to 15 people attended the session. We started with a blank whiteboard and elicited the full image of the system, with dependencies and criticalities. As I facilitated the visioning session, I illustrated the subsystems and links between them, calling out specific data requirements, reports and other dependencies. The session lasted for a little over an hour and by the end we had a vision, a literal picture, in Sketchnotes, of the system to be replaced.

Having everyone in the room short-cut the time required for writing and reviewing documents. Since this was a conservative company, this session avoided any discussion of agile practices or perceived "woo-woo" collaboration techniques and jumped directly into designing the project plan from the shared knowledge in the room. Please note that I had enough history with both the system and the stakeholders that I was comfortable with taking this approach. An outsider to the company may have had to rely on a more conventional method for writing a vision document.

The process was actually an agile method for gathering the requirements, without having to speak the name "Agile." Shared drawing, whether facilitated by one person or participated in by many, is an agile approach to capturing the zeitgeist of the room (the shared knowledge of the room). It follows many of the features of an agile process:
- Uses the Plan => Do => Check => Act cycle
- Proposes the simplest answer first, elaborate if necessary
- Uses short feedback cycles to avoid errors
- Involves collaborative design, if desired

The end result of this vision was that the project was greenlit and implemented in less than six months. The project was successfully received and is still in production. Without the shared vision of the system across multiple departments and zones of responsibility, this would probably still be a pending project.

# 7 Conclusion

It has been said that a picture is worth a thousand words. Using Sketchnotes will not only save time but brings many benefits, a few of which were covered in this paper.

As discussed, using Sketchnotes can improve personal notes by:
- Improving the ability to learn by processing in multiple modes
- Improving retention and recall
- Providing context for any topic
- Being easier to scan than dense text

Beyond personal improvement through Sketchnotes, the author experienced the external benefits of improved networking, higher visibility in crowds, and the ability to influence and facilitate successful projects through visual note taking.

This is only an introduction to the method of visual note taking. Hopefully you will be inspired to explore the topic more and take your own journey.

# 8 Further Exploration

This section includes people who have influenced me in thinking about Sketchnotes.

- Erin Dees can be found on twitter @undees
- Mike Rohde wrote the book on Sketchnotes and is on twitter at @rohdesign
- Zeger van Hese primarily sketches on paper with pencil and pen, then cleans up the notes after the talk and posts them to twitter @TestSideStory
- Julia Evans focuses on learning UNIX commands and programming. @b0rk
- When drawings are included, foreign languages become less of a barrier. Here are some non-English visual note takers
    o Luísa Diebold (Portuguese) @luisadiebold/
    o Hélène Pouille/J'ai Lu Ca (French) @helenepouille/
    o Sayo Demura (Japanese) @dem_sayo/

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