The Screencasting Handbook

Teaching you to become a better screencaster

By Ian Ozsvárd

TheScreencastingHandbook.com
About:
This handbook will teach you how to become a better screencaster. Ian and team at ProCasts have been screencasting since 2005, here Ian shares his knowledge to help you improve your skills. All of our techniques are covered along with all of the major software and platforms (including Camtasia Studio, Jing and Screenflow). We focus less on individual packages and far more on the general skills that you need to effectively explain, communicate, sell and support using screencasts.
By Ian Ozsváld (founder of ProCasts.co.uk)

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**IMPORTANT NOTE - UPDATES**

**Are you on the Updates mailing list?**

If you've just bought the book then you should automatically get invited to the Handbook Updates mailing list. I use this list to mail out new copies of the book to all purchasers. If you're not sure that you were added to the list (sometimes the automatic invites get lost) then jump to the very last page of the book. Give it a few days from purchase though, I check a little while after you've purchased to make sure the invite was sent.

**VERSION HISTORY**

May 2010 Release 10 - First Edition completed, edits made and bugs fixed based on reader feedback
April 2010 Release 9 - Completed "How screencasting works" and "Microphone technique"
April 2010 Release 8 - Completed "Distributing your screencast", wrote most of "Screencasting software", covered "Common workflows"
January 2010 Release 7 - Added "Export - which file formats do you need?" and extended "Screen resolution and your recording area"
December Release 6 - Merged "A deeper look at the techniques behind screencasting" into "Making a screencast in 1-2 days", added checklists to the three "Making a screencast in..." chapters, added two new examples to "What's the value of screencasting?"
November Release 5 - Wrote "Make a screencast in 2 hours" chapter, added "Distribution" chapter to talk about YouTube, Vimeo, Screencast.com and ShowMeDo.com.
October Release 4 - Added 'Making a screencast in the next 30 minutes' chapter and screencast, started an outline of the "Make a screencast in 2 hours" chapter
September Release 3 - Second release, added examples recordings to Microphones section, expanded the Other Resources list, expanded "What's the value of screencasting"
August 2009 Release 2 - First release, chapter outlines and early chapter drafts
**INTRODUCTION**

**IAN - TEACHER, FOUNDER, SCREENCASTER AND RESEARCHER**

I'm told that writing a book is hard and self-publishing even harder. Personally I love to share knowledge and I've built a few projects that do just that so I'm planning on building The Screencasting Handbook in the same way, one chapter at a time. I have 4 years of screencasting knowledge to share and I know a set of others who have strong skills and are kindly sharing their feedback. With luck this book and the associated discussion group will give you just the resources you need to learn new screencasting skills.

Thinking back I remember the wonder of first seeing video on the Internet during the late 1990s. I was doing my undergraduate degree at Swansea University (UK) and NCSA Mosaic had just been installed, I'm sure the video was awful by today's standards but the fact that this video appeared, for free, on my machine, at my request...wow! Now more searches occur in YouTube than in Yahoo! so YouTube would be second only to Google for search-volume if it were classified as a search engine. Video is a part of our world and it will only become more prevalent as bandwidth and processing power improves.

Jump forwards to 2002 - I was Senior Programmer for the Artificial Intelligence firm MASA (A.I. is the other 50% of my passion) with a programming and R&D team split between the UK and France. We had email and landlines but no live video and no easy desktop-recording software. I remember the pain of trying to debug remotely, having a colleague explain (with words!) what they were seeing on screen in complex applications and prompting them for things that might have been relevant. Now we have Skype with Desktop Sharing and tools like Jing and ScreenToaster to make this process easy.

In late 2005 my friend Kyran Dale floated the idea that videos of software ("they're called screencasts" he told me) would be an ideal way to teach programming remotely. We both have a passion for education - Kyran had completed two post-doctoral positions at Sussex University and 10 years after graduating I'm still involved with the Computer Science department. The idea that we could enable people to share their knowledge via these screencasts seemed like a wonderful idea - but no site existed to let us do this. Being programmers we scratched our own itch and on December 31st 2005 we released the first version of ShowMeDo.

Having no prior experience with marketing or business-building the early growth of ShowMeDo was somewhat, well, slow. It did grow and along the way we met some wonderful people (like Horst, Gasto, Alan Pope and HeathenX who join us here in the Handbook's Group), now the site serves 50,000 screencasts a month to an international audience and 100 authors have contributed over 1,000 unique screencasts, almost all crafted purely for ShowMeDo's audience.

One of the hardest experiences when founding ShowMeDo was the process of actually recording the screencasts. I'd sit at home in the evening (ShowMeDo was unfunded so it grew in evenings and weekends) and practice my screencasting. I'd set the computer up with a low-end mic and free software (CamStudio and VirtualDubMod) and proceed to break

2. http://masagroup.net/
out in a sweat. I hadn't even started recording and I was nervous. Heck, I had complete control over deleting any recording I made - yet I was still nervous. I assumed that this was personal but in the ShowMeDo group it became obvious that I wasn't alone - most of us had no idea of the 'right' technique, software, tools or processes - we all just made it up as we went along.

Jump forward a few more years to 2008 when I started ProCasts⁴. Clients had approached me via ShowMeDo to make custom demo videos that explained their software and after a while I broke this out as ProCasts which now occupies most of my time. The act of producing over 140 demo and tutorial screencasts in ShowMeDo gave me the experience to competently demonstrate software that helps clients to sell to, train and support their users.

Now I come full-circle. I've learned an awful lot over the last 4 years by reading, practicing and asking for feedback. Now I'm going to share my knowledge and invite collaboration from others with experience so we can teach you new skills and approaches to improve your screencasting abilities. I'm fully expecting some hard questions to come back from you and the answers will stretch my knowledge in new directions - don't be shy!

**WHAT YOU SHOULD GET OUT OF THIS BOOK**

You should find value in this book if you want to:
- make screencasts more quickly
- communicate more effectively
- get feedback from more people
- find a wider audience
- have fun sharing your knowledge!

If I'm missing a topic then post in the Google Group. I want to answer your questions so don't be shy in asking. You'll see sections in the book marked with "Reader - I need your feedback:" - here I'm asking for you to give me feedback (preferably in the Google Group). I don't want to waste time with long answers to topics that aren't helpful, also I don't want to write too briefly on topics that you want to read about. I need your feedback.

**WHAT'S THE VALUE OF SCREENCASTING?**

**TUTORIALS - LEARNING BY SEEING**

When learning it is generally accepted that if we engage more modalities⁵ then we have a better chance at recalling what we've learned. A 'modality' is a way that information is encoded. Examples include text, images and narration.

One of the hardest ways to learn anything that involves graphics is by reading plain text. Most of the software we use now has a rich user interface with liberal use of graphics, icons, menus and controls that move. If I cast my mind back to school in the 80s we had DOS-based WordPerfect and MS Word with ring-bound user manuals filled with page after page of text with nary a diagram to be seen. As long as you followed the instructions word-for-word and you had the word processor open you stood a chance - but woe betide you if you tried to read the manual at home and remember the steps the next day!

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4. http://procasts.co.uk/
The problem was the lack of mechanisms that would engage aspects of our memory - no images, no video, no sound, no speech - just plain black and white text. Learning to use software by reading a manual is generally regarded as a punishment!

Imagine also what happens if your manual refers to the wrong version of the software - with text-only manuals it often becomes impossible to recreate a series of actions when the menus and wording in the application changes as we lack all the cues we'd normally use.

Better manuals have graphics - sometimes even in colour. This helps a lot as it engages our visual memory and we have a better chance of recalling the information later. Pictures are still pretty rubbish at describing sequences of actions, especially if you need to interact with the application during that sequence.

Perhaps the best way to learn is when you have an expert sat right down beside you - they show you the application working, answer specific questions and gently walk you through the steps that you need to learn while you do the actions. This invokes many modalities and gives us the best chance of recall.

Screencasts sit between static graphics and having an expert close at hand. We get a visual, moving demo with a friendly voice, we can also have text annotations on screen and animations. The only thing we lack is a way to talk to the expert. If the screencast refers to an older version of the software we still have a chance of following along - often there are enough visual cues, coupled with the narrator's discussion, to give us the clues we need to figure things out. This means that screencasts still have value when software is being rapidly updated (which can't necessarily be said for old-style manuals).

An advantage of screencasts over an expert is that they can be replayed at will every hour of every day. If a commenting system is added then it becomes possible for viewers to leave questions and for the author to reply with an answer. The process is wiki-like where incremental units of information are added to the production (if not to the actual video itself).

We can also add translated subtitles to a screencast so they can be viewed by non-native speakers or replace the audio track with alternate languages.

Elizabeth Daley in *Expanding the concept of literacy* (2003, Educause) argues for an increase in the use of multimedia for education because text isn't ideal for many situations. She discusses all forms of multimedia and screencasting as a term was barely recognised back in 2003 but her arguments apply just fine:

> "...print carries its own technological bias. Print supports linear argument, but it does not value aspects of experience that cannot be contained in books. Print deals inadequately with nonverbal modes of thought and nonlinear construction."

Later Elizabeth talks about famous video-based scenes from world history and discusses why they are more evocative than a textual description:

> "Rich media, with its multiple simultaneous layers, does much more than provide enhancements, illustrations, and tools for enriching, accessing,

and transmitting the established literacy...Multimedia and cinema, though sometimes enriched by language, embrace many other elements as co-equal - not only image but also sound, duration, color and design."

She concludes:

"... following from the previous three arguments, those who are truly literate in the twenty-first century will be those who learn to both read and write the multimedia language of the screen"

As an aside, an article at the New York Times reports that a Study Finds That Online Education Beats The Classroom'. I'm not going to take sides here but I know that remote learning and video tutorials are a great way to expand the places where we can learn and when (and how often) we can learn. Not being limited to a classroom can only help a student learn at convenient times and it is bound to engage memory and thought processes in different ways to just being in a classroom:

"“The study’s major significance lies in demonstrating that online learning today is not just better than nothing — it actually tends to be better than conventional instruction,” said Barbara Means, the study’s lead author and an educational psychologist at SRI International."

PRODUCT TOURS - SEEING YOUR PROBLEM SOLVED

One of the reasons I started making product demos in ProCasts rather than just tutorials for ShowMeDo was that I could see the power in showing a first-time viewer how a piece of software solved their problem.

One of the biggest time wastes I’ve experienced when trying to choose new software is the up-front cost of deciding which packages to try. They all have fancy descriptions and many have screenshots but few are shown in action so you never know if they really solve your need until you download them, sink time into learning them and are able to make a sensible judgment.

If I had an expert on hand, I could ask them about specific use-cases and they could demo the software solving those cases. If they did the right job then I’d know to evaluate the software, if they didn’t then I’d know to move on. We can use screencasts to demo your software via your website to new visitors so they see it in action, solving common problems.

VISUALISING COMPLEX INFORMATION

I love this simple example of visualising non-trivial, complex (and geeky!) information.

In this video we see an Awesome C64 Visual Debugger (ICU64), the output window visualises the memory contents of the emulated Commodore 64 8-bit computer as a game

is played. You can see memory being filled as the game loads and how memory changes in real-time as the game plays in the neighbouring window.

Imagine trying to explain visual memory inspection using words or screenshots...instead we see the game playing and the memory changing in lock-step. The use of zooms in the debugger is also a great way of showing how nice it is to drill into data for detail once you have the high-level overview.

**Grant & Proposal Support**

Academics have used screencasts to support grant proposals. Screencasts can either add useful context to a proposal - showing past achievements and outlining what a successful outcome might look like - or they can be used as the main media for the proposal.

**Recording a Meeting**

When I attend a meeting with a client I often use my MacBook to record the meeting (obviously with permission!). The MacBook has a built-in video camera and microphone, ScreenFlow can record hours of content easily.

The main value is having a recording of our voices, with the on-screen clock (so I can make notes in my logbook against the time) with a screen recording for when we interact with the client's website. This way I can tally up my written notes with the discussion and screen so I have a complete record weeks later of all that was said. These screencasts would never be published (and generally are deleted once a contract is finished) but are a useful point of reference.

**Bug Reporting**

Sometimes it is far easier to demonstrate a bug than it is to describe it using text and screenshots. When playing with a new tool called vnc2flv I had trouble getting good FLV video output. I recorded a video and added it to a blog post describing the symptoms. In less than a day in the tool's forum I had the answer which turned out to be a simple problem with my choice of video player!

The use of video to demonstrate the problem (you need to see it as it involves a flashing screen which wouldn't make sense in a screenshot) meant it was obvious to some of the more experienced forum members where the problem might be, they gave me some options and their first guess was the right solution. If I'd have tried to describe the problem without a video we'd have been scratching our heads for a lot longer.

**Hardware Demos**

To demo how easy it is to program an Arduino controller I used a web-cam to show the Arduino's LED whilst I re-programmed it for a ShowMeDo demo. This is a simple way to

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10. http://groups.google.com/group/vnc2flv-users/browse_thread/thread/4efb6e8a816480be
show how easy it is to control something outside of the computer when programming, here's a screenshot:

![Arduino - 0010 Alpha](image)

**MACHINIMA**

Machinima\(^{12}\) is “the use of real-time three-dimensional (3-D) graphics rendering\(^{13}\) engines to generate computer animation”. Red vs Blue\(^{14}\) ([YouTube](http://www.youtube.com/show/redsvsblue), [Wikipedia](http://en.wikipedia.org/wiki/Machinima)) is the most striking use that I remember, R vs B started with their first episode W.M.D. PSA\(^{15}\).

The field started when enthusiasts would act out scenes inside the game and record the output, they’d then add a voice-over and they where then producing a new type of movie. The first well-known example of a machinima film was Diary of a Camper\(^{16}\) ([Wikipedia](http://en.wikipedia.org/wiki/Machinima)).

\(^{12}\) http://en.wikipedia.org/wiki/Machinima

\(^{13}\) http://en.wikipedia.org/wiki/Rendering_%28computer_graphics%29

\(^{14}\) http://redsvsblue.com/home.php

\(^{15}\) http://www.youtube.com/watch?v=38sQFFuTMzY

\(^{16}\) http://www.machinima.com/film/view&id=15043
WHO ELSE IS SCREENCASTING?

TUTORIALS

Below we'll take a look at four examples of tutorial videos covering open-source tuition in schools, office-application tutorials, commercial skill training and commercial product training.

Students explaining their Python-based Adventure Game project

How often do you see students so engaged in their work that they will record themselves explaining their new adventure game, written in Python, in 2 minutes? Horst, a teacher in Austria who encourages his students to explain their projects inside ShowMeDo. Mira created 'Simple graphic adventure game with python and easygui, part 1 (English)' which runs for 2 minutes with spoken English and English subtitles to teach you how her adventure game works including a look at the underlying Python code.

Mira uses a web-cam to record her image while she gives a live, unedited demo of her game. The game uses a simple graphical tool-kit to present descriptions, actions and images. The fonts are larger than usual so they are recorded clearly, the English sub-titles make it easy to read if you have trouble with Mira's accent. Having watched the video the night before I found I could still recall the structure of it the following morning in part because it mixes an enthusiastic speaker with video and interesting images - there are many things here that engaged my memory.

The second video in the sequence shows Mira and her sister Teresa, they form quite a double-act as they explain the second version of the game. Horst has a homepage for the project which links to both the videos and source code along with a discussion.

ShowMeDo allows contributions from anyone, the motto is 'good enough is good enough' - this embodies the idea that if you can make a recording that teaches a new skill to the viewer then it is acceptable as new content. Production quality can be variable, viewing some of the screencasts will give you an idea of what's possible by untrained screencasters with various skill levels, often with home-built collections of equipment starting from bundled mics and free software.

ShowMeDo's Python section has 505 screencasts in 141 series, you'll find a variety of techniques from many authors.

Horst used Ubuntu Linux and gtk-recordmydesktop with a good webcam and a cheap mic. The desktop was set to 1024x800, ekiga showed the webcam and geany was the IDE. Horst used the production notes in ShowMeDo which includes details for recording, editing, cropping, audio manipulation, logos and output.


TheScreencastingHandbook.com © Ian Ozsvárd 2010
Horst has added the he "prefers recording the sound directly with the webcam using the command: mplayer tv:// to display a webcam window".

**Kids teaching math to kids**

[MathTrain.com](http://www.techsmith.com/community/education/real-users/mathtrain.asp) was established in 2006 by Eric Marcos to help kids teach math to other kids. There’s a nice [write-up](http://www.techsmith.com/community/education/real-users/mathtrain.asp) at TechSmith as Camtasia Studio was the main tool, the videos were hosted in a [Moodle](http://moodle.org/) e-learning system.

**Teaching Python Network Programming at University**

Tim Bower uses screencasts to complement his book, the Network Programming Study Guide. His [online notes](http://www.sali.ksu.edu/faculty/tim/NPstudy_guide/index.html#guide) explain that the videos show you processes that are described in the book:

"Providing instructional videos regarding the construction of programs and demonstrating the usage of various programs. Currently, all of the videos are available through K-State Online, which requires enrollment in the class, and some of the demonstration videos are available through ShowMeDo."

His [Python Network Programming](http://showmedo.com/ videotutorials/series?name=J8Pgfi4nA) series in ShowMeDo has 4 videos. In the first screencast he shows a live client/server chat system, he uses a large font and gives a very clear demo. He uses a mouse highlight which is a nice way of helping you see exactly where the mouse is.

In the second video he shows coloured syntax as he explains some of the Python code, the third video is a very thorough 18 minute walk-through.

Tim used an Altec Lansing head mic (discussed in the Microphones chapter) with 3.5mm (not USB) connector. The fourth video sounds different as Tim used a C01U mic rather than the Altec Lansing. For recording Tim used Camtasia Studio 4.

**Open-source enthusiasts explaining Open Office**

When was the last time you used an open-source Office application suite and found the docs hard to follow...and then found screencasts that walk you through all the usual operations? Dai has created one of ShowMeDo’s most popular series with this [Introduction to OpenOffice Base](http://showmedo.com/ videotutorials/series?name=AXggL6j0a), this is the kind of feedback he gets:

"Down to earth knowledge share that can help me to create database. Direct to the point teaching minimizes learning time. Thanks a lot." - *rommel*

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Dai has used an opening and closing title which adds a professional edge to the production, this is a very easy step with a tool like Camtasia Studio and I believe that the assets came from the openoffice.org website.

ShowMeDo's OpenOffice section has 10 series each containing 6-28 screencasts, you'll find a variety of techniques from 10 authors.

**Commercial web and graphics tools taught at Lynda.com**

Lynda.com is a well-respected repository of screencast training material for commercial web and graphics tools, it is widely known in the web-design and graphic-design world. Lynda's content base has been growing for 10 years, the production process is typically higher-quality than ShowMeDo's and only a few authors are chosen to add to the site.

Typically an author is flown to their studio to record in their environment, the recordings include full-body videos mixed with straight screencasts. This will give you an idea of what's possible for untrained presenters coupled with experienced producers.

This page lists a course on Premiere Elements 7 Essentials, the underlined links are free content that you can view without a subscription. If you watch 'Understanding the workflow' you'll see an upper-body recording of the author which transitions to a PowerPoint-like presentation. The 'Relinking missing media' episode is a screencast that walks you through a process.

**Commercial emailing service taught at AWeber.com**

AWeber is a commercial service that manages an email distribution list (if you receive emails from TheScreencastingHandbook then you're on our AWeber list). AWeber has fully embraced screencasts as a way of teaching users both how to use their software and how to effectively market using emails.

AWeber's video tutorials are smoothly produced, typically on a Mac. They use a variety of speakers and the production quality can vary a bit e.g. Getting Started uses zooms but Send Email Newsletters doesn't - so it is hard to read the screen! The narration is typically clear, well paced and noiseless so it is easy to listen to and the screencasts flow smoothly.

I highlight AWeber's use of screencasts because I found that they made it incredibly easy for me to learn how to setup an email list. Prior to TheScreencastingHandbook I'd never setup a list in this way - not only did the screencasts explain how to complete the goals, they also taught me why I should care about certain steps.

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PRODUCT TOURS

Google are a new adopter of screencasting, we'll look at one of their recent examples below along with TechSmith's productions for their screencast-related products. I also discuss the dual-narration FogBugz demo and one of our ProCasts productions.

Google

When Google released their new Chrome browser they knew they needed to have a quick, easy way to tell people why they should try it rather than stick with their usual browser. They created 10 very short screencasts (each 15-30 seconds) that give a quick tour of each of their main features.

These videos are great if you just want a quick idea of their features and they are very easy to make but they don't give you an example of a typical session, so you don't necessarily see how their features will fit into your way of working.

FogBugz

Joel and another team member use the very interesting approach of giving a product tour with two speakers with an informal, jokey approach. The product is FogBugz, a well-known and respected bug tracking tool for software developers. The 12 minute screencast is a bit of a long watch, the fun narration kicks in at around 0:33 but listen to the first half-minute to get a feel for Joel's approach.

Inside ProCasts we took inspiration from Joel's approach and used a dual narration for our tour screencast for MockupScreens. I took on the role of the 'contractor' and my colleague Richard was the 'client', we also used animations and a hand-drawn slide to add extra visual touches as we demonstrated a typical session mocking-up a user-interface.

TechSmith

TechSmith are one of the grand-daddy suppliers of screencasting software, their Camtasia product is well-known as being the most widely-used screencasting tool on Windows. All of TechSmith's products have tour videos, you can see the Camtasia Tour here. They have a separately recorded narration track with nice music played over screencast recordings and end with a full-screen video recording of an employee.

Crunch

Inside ProCasts we created a 4 minute tour for Crunch's homepage to show a first-time visitor how their software helps freelancers to record invoices, payments and tax calculations. They combine an accountancy firm with an invoice-tracking tool, that's the first time such a service has been created in the UK. The screencast includes an animated introduction and a short animation to explain the concept.

TECHNICAL SUPPORT

Screeencasts aren't often seen for technical support but when used properly they can really save you time which means you have more time to build your project.

Coursework.info provides background material for coursework assignments. Their users have a variety of capabilities, some have trouble using the Internet and aren't comfortable with credit cards and on-line billing. Their problem was a small but significant volume of support emails and calls from users who had finished using the service but couldn't figure out how to cancel their recurring payment.

These callers needed handholding which took approximately 15 minutes per user. Inside ProCasts we created a 3 minute screencast that walks the user through the process of cancelling their subscription, we used a slow, clear walk-through with a calm, confident voice and several on-screen annotations. The result was that most viewers were able to cancel their subscription and the support chap regained several days a month to spend more time helping other users.

The live version is only for logged-in members of coursework.info, you can see our copy on the ProCasts examples page, scroll down to 'Cancelling your coursework.info Subscription' and click the icon.

User-created tech support

YouTube run a clever channel - in YouTubeHelp's Channel your technical support videos are shown as official support videos. Despite YouTube's size they ask their users to make their technical support content! This certainly emphasises YouTube's do it yourself attitude.

38. http://procasts.co.uk/examples.html
39. http://www.youtube.com/user/YouTubeHelp