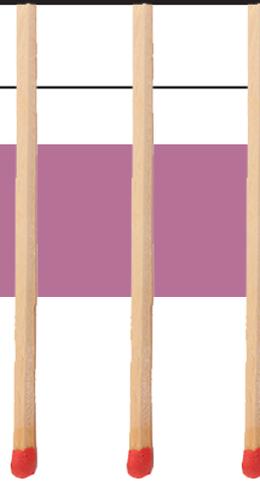


The **three** Amigos

by Dr. Bruce Scharlau



Why do I teach entrepreneurship? Because I am passionate about finding ways for students to work with the world before leaving university. Praxis plus theory trumps theo-

ry on its own. One of my favourite courses brings all of this together. Student teams develop business ideas by combining the 'three amigos': service design, lean startup and agile development. These three amigos work well together, as each follows an inspect-and-adapt cycle of development in which feedback on the development of an idea comes early and often, following reflection on what is known at the time.

My Story

This story focuses on my experience of bringing the three amigos into the teaching process at the

University of Aberdeen, Scotland, where I co-ordinate courses on software design. It explores the rationale behind service design, lean startup, and agile development, as well as the inclusion of various approaches to the course delivery, covering different learning styles. Lastly, this story will reflect on what works well, and on the issues that have arisen in teaching this course.

Why Teach the Three Amigos?

Each of the three amigos explores a different area of the four stages of the incremental and iterative creative process: discover, design, develop, deploy. When we create, we explore the background and issues of the problem (discover), craft potential solutions to the problem (design), and then prototype a chosen solution (develop) before implementing one or more solutions (deploy).

The three amigos combine to ensure that our creative problem-solving remains focused. Service design ensures that we build the right application to meet people's

Definitions

AgileDevelopment

is a group of software methods where requirements and solutions evolve through incremental and iterative deliveries of potentially working software.

Service design

is the activity of planning and organising people, infrastructure, communication, and material service components in order to improve the quality and interaction between the service provider and customers.

Lean startup

is a method for developing businesses and products by adopting a combination of business hypothesis testing cycles to ensure that the service is being developed to meet customer needs.

needs, lean startup ensures that we avoid wasteful work, and an agile development process ensures that we put the application together in the right way, with quality built in from the start. Together, this gives us an important set of overlapping methods which allow the solution to be developed incrementally, using co-creative approaches that clarify assumptions about what is required, so that the required components are delivered in the right order and at the right time.

In 2011 and early 2012, I attended a number of unconferences, where I realised that I needed to bring the three amigos more deeply into my teaching. I set about doing this whenever and wherever possible, so that students were doing more of what was happening in industry. This involved changing lecture content, practical sessions, and the locations of sessions so that the room was more amenable to different types of activities. It also meant recording lectures, so that lecture time could be spent running games for learning, leading to discussions during that hour slot.

Beyond the course, this has also meant creating opportunities for students to engage with developers, designers and communities beyond the university, for example:

- The Northern Lights conference: an annual, one-day enthusiasm booster, held in October and attended by industry speakers from the software development and design community. The conference also includes some open-space sessions so that any participant can propose and run a workshop of their own.
- The Global Service Jam, a 48-hour global event to bring people together to learn and share service design skills. We host the Aberdeen crowd each year.
- We also organise a number of Code The City civic co-design events, where community participants help designers and developers to craft solutions to their problems using open data.

These events provide student participants with the opportunity to see how others use the tools and processes they learn in class, helping them to apply these skills themselves. For me, this is an important aspect of our teaching: providing non-classroom experiences, where students can work with others, talk to others, and receive affirmation that their skills are useful. For some students, these events are also about finding internships and future employment, but that is another story.

Learning Aims and Outcomes

- Students should leave the course with an understanding of each of the three amigos and how they work well together, and having gained a creative team experience.
- They should be able to appreciate and articulate the need for each of the three amigos in developing a business idea.
- They should be able to apply service design and lean startup techniques to specific scenarios, and analyse what they reveal.

The Learning Experience

This is a project-based learning experience for teams of students, so that they can help guide each other and have a chance to improve their teamwork skills. They choose their own teams. By mixing lectures with hands-on, practical teamwork, space is created for each student to apply their favoured learning style to the course activities. This course is taught mostly by 'doing', with a few lectures on key themes such as short feedback loops and systems thinking, and the need to combine the three amigo approaches. Most of this course, however, is delivered in weekly two-hour practical sessions. The key themes are:

- Clarifying your vision and motives for running your business.
- Using the three amigo approaches to guide the implementation of your idea, so that you have useful feedback to keep you on the right track.
- Getting out of the classroom and sharing your ideas, in order to find out what you have forgotten (or simply didn't know) about your customers.
- Remembering that your idea is just an assumption until you validate it with the opinions of potential customers or stakeholders.

In the middle and at the end of the course, teams submit a portfolio of work to be assessed. These portfolios include a narrative explaining how the idea developed over time, and contain a collection of artifacts, which might include customer journey maps, storyboards, a happy startup or lean canvas, empathy maps, or service blueprints. In the last practical session, each team also presents their final idea to the other students.

Books

Lessons Learned

I have taught this class to groups of 20-35 students for a number of years. The biggest challenge is encouraging students to let go of their idea enough to show it to someone other than a friend; someone who might be a stranger. Every time they do, students learn that there are things they didn't know about their idea. My goal is to find a way to help them appreciate the importance of gaining feedback from others at an earlier stage.



Resources

To help you design your own course around the concept of the 'Three Amigos' please go online and search the Coneect compendium for 'design thinking' or 'lean startup'. To get you started, here are two books:

The Happy Startup ebook

<http://www.thehappystartupschool.com/ebook> from the Happy Startup School offers a canvas blending problem/solutions pairings with Simon Sinek's 'why' question.

Scrum and XP from the Trenches

<http://www.infoq.com/minibooks/scrum-xp-from-the-trenches-2> by Henrik Kniberg will help you apply these key ideas in development to your project.

You might also want to watch the video by Professor Klaus Sailer on innovation:

<https://www.youtube.com/watch?v=rYM5aHft-W9o&list=PLyXAaocQQ2XZAG1-Fza3I5uoDzISjIF-O&index=24>



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Acknowledgements

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I am an academic and consultant with over fifteen years experience designing and developing software, and educational programmes for academic and business audiences. I am currently a Senior Teaching Fellow in the Computing Science Department at the University of Aberdeen, and Director of Undergraduate Teaching for Computing Science. I teach a wide range of undergraduate and postgraduate courses. I am a trained Lego Serious Play facilitator, and regularly incorporate play and games into my teaching. I organize and manage the

Aberdeen Software Factory, which helps put students onto paid software development projects so that they can apply what they learn. I am always looking for opportunities to bring student talent to bear on creative problem solving through co-creative design processes, which is why I am also a trustee for Code The City and help organize its civic co-design events.



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