Eight Steps To Build A Better Swiss Software Industry

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The Swiss are the best at many, many different domains. Which is a rather surprising and seriously fantastic feat for such a small country with merely eight million people, divided in four quite distinct linguistic groups.

For example, in no particular order, let us mention those incredible artisan watchmakers, from La Chaux-de-Fonds to Schaffhausen, creating incredibly complex small machines almost entirely by hand, passing knowledge and tradition to newer generations for almost 300 years, and able to overcame serious situations like the "Quartz Crisis" in the seventies and eighties.

Or those amazing civil engineers, able to design and build the longest and deepest tunnels ever dug in the planet, able to build one of the highest dams in the world in the middle of the Alps, or able to lay down train tracks, aerial tramways or bridges in the most unusual and breathtaking locations on Earth.

Or these outstanding tennis players, constantly in the higher rankings for the past 25 years, like Marc Rosset, Martina Hingis, Roger Federer, Stan Wawrinka or Timea Bacsinszky.

Or those fantastic adventurers, explorers and entrepreneurs, like Jean Louis Burckhardt, first European to find the city of Petra. Sarah Marquis, who walked twenty thousand kilometers from Siberia to Australia. Claude Nicollier, the astronaut who led the Space Shuttle team to cure Hubble from myopia. Or the Piccard family, who in three generations went from the deepest ends of the ocean, to the highest levels of the atmosphere, to travel around the world in an electric airplane. Or Louis Chevrolet, pioneer of the automotive industry and founder of the car brand bearing his name.

And let us not forget about renowned artists like Sophie Taeuber-Arp, Alberto Giacometti, Mario Botta, Le Corbusier, Jean Tinguely, or Patrick Chappatte, featuring their work in the most important museums of the world and considered references in their respective crafts.

And I could continue on and on and on. Women and men who have shaped the world, crossed borders, enlightened our imaginations and showed the world that the sky is not even a limit, all coming from a small landlocked country, stubbornly independent and filled with cheese, watches, Heidis and other clichés.

What About Software?

Apart from some glorious exceptions, among which I would name the venerable Niklaus Wirth, creator of Pascal among other languages; Martin Odersky, the creator of Scala, from German origin but teacher at the EPFL in Lausanne; Alexandre Juillard; René Sommer; or companies like Kudelski or Logitech, the Swiss landscape of software engineering is definitely not what one would expect at first, particularly when compared to other branches of engineering.

How many Swiss-made software products make the headlines at Techcrunch? How many Swiss startups are bought every year by big companies in Silicon Valley with valuation in billions? How many Swiss software developers have cashed their stock options so far, à part those who had the luck of working at Logitech in the eighties? How many Swiss app makers have won an Apple Design Award (apart from Pixmeo for their product OsiriX in 2005, or Curvus Pro X, runner-up in 2004)?

The answer to all of those questions is a grim mix between ”not a lot” and ”none at all.” The so often called “Swiss Silicon Valley” is yet to be found.

This lack of brilliance is mostly apparent in the overall quality, usability and usefulness (or, rather, lack thereof) of Swiss software products. These are most usually late to market, feature clunky and awkward user interfaces, are usually more expensive than their counterparts and are designed with the least possible common sense. Thankfully most of these products are rarely exported, limiting their possibility for mental disruption to the borders of this country.

This dire situation has been identified long ago; to solve this dilemma, many different ”startup incubators” exist in the country, both in the German- and French-speaking regions, from federal to cantonal level, to encourage the creation of new companies in buzzword-compliant “hot” industries such as “Wearables,” “Fintech,” “IoT” or other similar ones.

But, in spite of the billions of Swiss Francs injected into these hubs, one would be hard-pressed to watch the spectacular expected outcome, the one your favorite financial magazine regularly fills its pages with.

Why is that? What makes Switzerland a relatively poor choice for technology startups, particularly when compared to other European hubs like Berlin, Amsterdam or London? Why is the Swiss software industry not following the steps of other branches of engineering and being showcased as world-class examples of design, usefulness and universality? Why are so many Swiss star developers leaving the country to shine abroad?

The Reasons

I have identified ten basic reasons for this situation, and they have all to do with Swiss culture:

1. Hierarchies
2. Design-by-committee
3. Cult Of The Monoculture
4. Lack Of Technical Knowledge Of Project Managers And Founders
5. Lack Of Digital Design Education
6. Excessive Quest For Perfectionism
7. Lack Of Proper Risk Management
8. Excessive Processes Considered Harmful

As Jack the Ripper would have said, let's go by parts.

1. Hierarchies

Hierarchy is, by far, the primary social organization of Switzerland.

Everything in Swiss culture has to fit in some kind of pyramidal structure, and this has been the case for centuries. The most important example of this mindset is none other than the Swiss Army, one of the largest militia armies in the planet, rigidly structured and where the life and work of every single soldier is clearly defined, managed and observed.

Let us not forget that, still twenty or even fifteen years ago, one precondition to be promoted as a manager in any Swiss company was to be an officer in the Swiss army. Things have changed (thankfully!) but in many small firms, the idea of an all-knowing superior mind on top of the hierarchy still exists, and still drives people.

In a hierarchy, there is a clear tradeoff: **control versus dialog.** In a hierarchy, the workers at the bottom of the food chain are not expected to be listened to. And if by some level of corporate hypocrisy they are made to believe otherwise, the top management can afford to avoid listening at any moment.

Decision makers are on top. They are always right, even they are not. They are the captains of the ship, until it sinks.

The top management layer of many Swiss companies is utterly incompetent in technical matters (more on this later) and is completely and absolutely incapable of taking technical decisions; yet, that is what they do. Most "suits" have beautiful MBA degrees, awesome PMI certifications, receive incredibly high salaries and "status perks," all while taking horrendous decisions, later holding absolutely no accountability whatsoever for their mishaps.

The net result is that there is a huge level of turnover among Swiss software developers, simply because top management will never listen to them, because there is no dialog, only command-and-control structures, and so they leave. And turnover is expensive. Very, very expensive.

Hierarchies are the first and most important problem in Swiss software development companies, because **software development is a social process.** It requires dialog, feedback, from all levels of the organization, and without that feedback, there cannot be quality software at the end of the day.

This situation must change, and I hope that the few "suits" reading this text will realize that the golden cage where they live is actually keeping Switzerland back from becoming a world leader in software engineering.

The solution is simple: stand down from your thrones, trust your engineers and learn from them. And if this is the only factor that you care about, please know that you could be making far more money than you already do if you followed this simple mantra in your organization.

Swiss software makers must drop hierarchies.

2. Design-by-Committee

Switzerland is an incredibly democratic country, featuring elements like the right to propose popular initiatives, regular referendums and a decentralized power system (organized in quite a tight hierarchy from cantons to districts to municipalities) which is unique in the world.

However, when it comes to product management, democracy is a hindrance. And when it is coupled to hierarchies, you get the second biggest problem of the software industry in Switzerland: design by committee.

Product management is a complex thing, and for accountability purposes (remember hierarchies?) Swiss companies tend to organize decision making in product teams around groups of people, literally voting (not a joke) for end user features, or for the color and fonts used in the UI.

This situation is actually holding back Swiss designers from being more recognized abroad (more on that later) but it also generates at the end absolutely horrendous products, simply unusable and lacking the most basic common sense.

Product teams should have two things: **a strong opinion and accountability.** There should be one, maybe two people at most taking decisions, and these people should have both design and engineering skills. For products designed by non-technical designers will be technically impossible to create, and products created by design illiterate engineers will look and feel horrible.

Great products are born out of a dialog between design and engineering (remember what I said about hierarchies trading dialog for control in the previous section) together with opinion and accountability. Right now this dialog is not happening in this country.

Swiss software makers must drop hierarchies, to enable a dialog between design and engineering, using a more opinionated and less democratic approach to product management.

3. Cult Of The Monoculture

For all of its incredible democracy, Switzerland was one of the last countries in the world to allow women to vote in Federal elections, as late as 1971. For all of its incredible diversity, this is a country where a right-wing party owns a newspaper, the infamous German-speaking Weltwoche, which regularly mocks the French side of the country (itself featuring higher GDP growth rates than the German cantons for the past decade) as an underdeveloped poor peninsula.

The Swiss engineering culture is slowly changing and moving away from stereotypes, but still shows a strong bias towards teams formed exclusively by white males. Even worse, most of them usually come from the same school or the same canton and speak the same dialect. This is happening in a country where 50% of the people are women, where 40% of the inhabitants come from abroad, where there are four official national languages, where 35% of the population at least does not speak German properly, and where there is a myriad of technical schools in every corner of the country.

Even worse, the hierarchies in place actively discourage or blatantly dismiss input from women, from people from different nationalities (even from different cantons…,) from engineers from different schools or from different age groups. And this leads to an unspoken series of despicable situations, among which sexual and moral harassment, discrimination based on gender or age or nationality, abhorrent gender salary gaps, and a myriad of lost opportunities for our economy. All of this is increasing turnover rates, and in the worst cases leads to burnout, illnesses and sadly even to suicides.

Why are not we speaking about these issues? Why are not we changing these attitudes? What is it that we Swiss are so proud about this outrageous engineering culture? We should be ashamed of ourselves.

This situation is easily visible in the all-white-males “about us” pages in most websites – where sometimes women appear as receptionists or HR managers.

It is also blatantly visible in large number of websites and software packages produced in Switzerland in **only one national language.** If the product happens to be developed in Geneva, forget about German or Italian; if the product happens to come from Zurich, forget about French or Italian. Actually, you can easily forget about Italian and Rumantsch, the fourth national language, spoken by around forty thousand people, but completely out of the horizon for virtually every single company or product online.

And for a country that has such a large number of expats with an incredible purchasing power at their disposal, the number of commercial websites in English is abysmally low. Talk about lost opportunities. Switzerland is indeed a small market, but if your product is only available in German or French, you are making your target market even smaller.

And let us not even talk about software accessibility issues, which are hardly ever taken into consideration by our industry.

We need to break the Swiss monoculture, in order to create an inclusive polyculture. We need more women, more foreigners, more languages, more younger and older people working together. This diversity is one of our greatest chances for success, and it only exists as such in a few other countries in the world. This diversity will be the key to make the best possible software products in the planet, and will truly place Switzerland at the forefront of the software industry.

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4. Lack Of Technical Knowledge Of Project Managers And Founders

Software is a complex thing. Some say it is probably the most complex of all the creations ever done by mankind. Software allows us to land a small probe on a comet traveling at incredible speed at the far end of the solar system. Software allows us to talk, to communicate, to laugh, to share, to create, in as many ways as possible.

To achieve all of that complexity, lots of people have to coordinate efforts, during weeks or months, sometimes taking steps back to ensure that the much feared “technical debt” will not end up eating the whole of the budget.

But for some reason, most directors, project managers, product owners, product managers in this country actively believe that they can manage engineers from the top of their comfortable hierarchies without any technical knowledge whatsoever. Heck, they even brag about this fact; and cluelessly enough, they even do it *in front of their own engineers.*

This is a situation that cannot continue. Particularly in a country with hierarchies replacing all dialog with rigid control procedures. Particularly in an industry that requires complex technical decisions at every single small step.

This is a recipe for disaster and this is the daily situation of most Swiss software engineers.

The solution for this problem is twofold.

On one side, MBA programs should all include by now a required entry in their curriculum, to teach their students how to manage software projects. These kind of projects are unlike any other, and feature team dynamics that can be unsettling and unfamiliar. Yet, stubbornly enough, this is not happening.

We need managers explaining the current business problems to the developers; they can understand those problems, and they will thank you for establishing an open channel between different teams in the same company. Do not hide business problems to your engineering team; be transparent to them.

On the other side, we need developers to start teaching their project and product managers and even their CEOs, that it is tantamount for the success of their teams to have them understand the challenges that are underpinning every technology choice.

We need developers saying no, once and again, to managers in the top levels of the hierarchies that are oblivious to the technicalities of the projects that will pay for their bonuses at the end of the year.

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5. Lack Of Digital Design Education

There is a fundamental problem in universities and business schools. I have mentioned above the lack of technical knowledge in MBA curriculums, so I will not dive into that matter again. But there is another issue that is dangerously blocking the prospects of the Swiss software industry: the lack of digital design education.

Most designers coming out of Swiss schools end up working in “traditional” sectors, like newspapers, printed media, advertising, while the software industry is left behind with most of the UI and UX design done by software engineers – people who, needless to say, have received virtually no education in those fields whatsoever.

For a country that has a font named after it, let us be very clear: it is a shame.

We need to have Digital Design curricula in both technical schools, for engineers and software developers, and also in design schools, to bring new designers in our industry. Without this injection of fresh ideas and new trends, the Swiss software industry will always be lagging behind the innovation seen in other parts of the world.

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6. Excessive Quest For Perfectionism

If there is a typical Swiss trait, is the eternal quest for perfection. Comic book readers might remember "Astérix chez les Helvètes"where the Swiss prisoners in the palace of the Caesar in Rome were cleaning up everything, continuously, driving nuts the Roman intelligentsia.

Swiss people genuinely want to do their best, in every situation and every single time. As laudable as this attitude is (and, believe me, it is absolutely delightful to live in a country like this) there is a darker side as well, particularly visible in the Swiss software industry.

This tendency to perfection makes Swiss products to suffer from a major flaw: **to be late to market.** Swiss software developers have a really hard time with the concept of the "MVP" (Minimum Viable Product) and I have witnessed many disasters happening around companies literally going out of business, having no product to sell until it is very, very late.

Swiss software development teams must learn to let go, and show their work even if it does not fully satisfy the requirements for quality that they have been culturally taught to provide. It is OK to ship a not-so-good product to a smaller audience, but only if this allows you to quickly get feedback from the market, and also if you continue the development and improve the quality of that product continuously.

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7. Lack Of Proper Risk Management

Switzerland is the home of the biggest insurance companies in the planet. This country has built a reputation for having the best risk managers of the world, evaluating the odds that things might go wrong, and helping manage and hopefully mitigate the risks related to any activity.

But this same country is also behind in terms of risk management for software development projects. We all know that evaluating risk in software projects is a tricky issue, yet it is also true that the lack of proper metrics from software projects blocks risk management experts from evaluating the risks properly, to create mathematical models to help us understand the odds for a particular project to go south.

The only "kind of" risk management used in Swiss software companies is actually the worst: not to do anything at all. Immobility. Projects and features regularly drop from Kanban boards all over the country because of fear, uncertainty and lack of vision.

We need insurance companies in Switzerland to start gathering data about software development projects – but this, of course, requires technical education for the MBAs that run those companies, and so far, we have none. We also need software developers and most importantly their managers to understand risk management. This will help them create better budgets and better planning, to reduce the costs of software projects in the long run, instead of choosing immobility and fear as an option.

Again, we need a dialog between business and technical teams, in order to lower the costs and increase the chances of success. Switzerland has good developers and world-class risk management staff, yet completely lacks of any kind of dialog between these two industries.

I dream of the day when the Swiss insurance industry will propose standard contracts to manage liabilities in software projects; if we had proper statistical data from past projects (both failures and successes,) and if risk management experts understood technical issues, we could model better outcomes for our projects and bring an unprecedented level of confidence in the Swiss software industry. This is yet another unique opportunity for disruption, one that could have incredibly positive outcomes for the industry.

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back to make better products; exposing standard metrics of success and failure, enabling risk management experts to provide models to mitigate the impact of failed projects and to increase the competitiveness of the Swiss digital economy.

8. Excessive Processes Considered Harmful

The final item in this list is the one that hurts the most, and is a consequence of the many other problems I enumerated before.

Processes are the golden rule, the bureaucracy created in order to comply with hierarchies, control structures, committees, and to preserve the status quo. Switzerland lives and breathes through processes and regulations. And this is also true in the workplace. Oh, yes.

Many Swiss companies still insist in dictating to their engineering teams how to dress, what times to work, where to work from, which computers to use or not to use, which languages to use or not to use, and what kind of open-space office to setup. I have seen companies where even the layout of the furniture, the location of the whiteboards and the size and height of desks are completely described and setup by ad-hoc teams.

Do not get me wrong; some of these regulations are a godsend. For example, fire regulations. Swiss security guidelines are extremely strict, yet at the same time superbly easy to follow. Switzerland has an incredible low rate of deaths in fires and related accidents because they are *that good* at teaching, preventing and communicating about risks.

But it all goes overboard very quickly. Do not be surprised if…

- … a CTO explicitly forbids the use of open-source code inside of an organization.
- … an IT department prevents a consultant from connecting a Mac to a wifi network in order to create the iOS application he has been hired for.
- … the same IT department cuts the access to a cloud-based continuous integration server without warning, and then threatens someone of termination because of a "security breach."
- … an employee get a sermon by her HR manager because of the use of a short-sleeved shirts in summer without authorization.
- … a woman is fired by that same HR manager after coming back from pregnancy leave and just gave birth to her baby (yes, that can happen in Switzerland.)
- … consultants are asked to deliver the final software to their client in a USB stick, because FTP or Dropbox are blocked because of security concerns.
- … a manager yells at her subordinate on the phone because she forgot to enter data in your three separate timesheet systems at the end of the day.
- … one can hear laughs when asking for a VPN access to be able to work from home.

- … engineers have to wait for two months to have a server installed in the DMZ of a corporate network.
- … a manager breaks a four person team into two subteams of two people, with one "leader" each, and then enters that information in the local Active Directory of the company so that he can email only to the two "subteam leaders."

All of these situations are the outcome of the rigidity of procedures, all going against the productivity and even the well-being of people actually performing their day-to-day tasks.

I know no HR manager working in a Swiss software developer company who has read the book Peopleware. I hope some have, though. They are supposed to be "managing" software engineers, developers and testers after all.

We still pretend to have a serious "software industry" in the country, when we actively dismiss the core values that make great software teams: **flexibility, trust & communication.** One cannot replace these three values with hierarchies and control systems.

And speaking about HR, let us not get started on hiring processes; they are the worst, geared not to find talent but to fulfill a checklist of requirements; unless all the checkboxes are ticked, HR managers will never call you or even acknowledge your application. They also fail to tackle the issues I talked before about diversity, harassment, burnout, turnover and suicide in the workplace, as if these problems did not exist at all.

We need to focus less in processes and more in the people doing the work. Companies are about people, not about processes. We need HR managers and teams to understand that software workers do things differently, and that the traditional management systems used in Switzerland since the nineteenth century are completely out of context in the digital world of the twenty-first century.

Taking this into account, the final version of our manifesto for a better Swiss software industry looks like this:

Swiss software makers must drop hierarchies, to enable a dialog between design and engineering, that is between managers, designers and developers; using a more opinionated, modern and less democratic approach to product management, including people from all origins, sexual orientations, ages, cultures and languages; empowering managers to take sound technical decisions and developers to understand the business tradeoffs, with the help of skilled digital designers innovating and setting trends; putting their products on the market as soon as possible to gather feedback, and using that feedback to make better products; exposing standard metrics of success and failure, enabling risk management experts to provide models to mitigate the impact of failed projects and to increase the competitiveness of the Swiss digital economy; finally, centering the focus of

attention on the workers, those designing, creating and maintaining the systems that bring value to companies and society as a whole.

A New Hope

I have seen, thankfully, some companies breaking the mould: I can mention Ubique, Liip and Antistatique in this group. These companies are actually breaking the rules. They really "think different" when it comes to making apps through engineering and design. They break hierarchies. They setup their offices to increase happiness. They are diverse. They earn awards for their work. They thrive in a very competitive domain. And it shows in the incredible quality of their applications and systems, most of which is sadly invisible to end users, but shines through their speed, usefulness and performance.

(And for those wondering, I am not affiliated with neither of these companies, now or in the past. I just happen to know personally some people in their teams and I have seen how they work. They are awesome, and more than you think. There might be more companies like these I have not heard about – I hope! Let everybody know their names in the comments section below.)

Please pay attention to the fact that I have left out of the equation some classical arguments, namely the "excessive costs" of Swiss manpower, or the "lack of venture capital." In my opinion neither is a deciding factor for the lack of brilliance in the Swiss software industry. First, I have personally seen incredibly effective teams working in Switzerland, with Swiss salaries, in Swiss locations, renting Swiss offices, scrupulously obeying Swiss laws. And secondly, money is not a rare commodity in this country; lots of venture capitalists live and work here. I will leave the economical argument to feed the headlines of financial magazines.

I will not include in this analysis big corporations, such as IBM, Yahoo! or Google, who happen to launch "research labs," startup incubators or just administrative offices in the country. My personal impression is that these big companies are primarily present in Switzerland to avoid paying excessive taxes in their home countries.

Conclusion

The point of this article is that the biggest challenge faced by Switzerland to thrive in the software industry has to do with the social dynamics required in software development teams. Or, at the very least, to unmask the riding hypocrisy that populates the tech sector in this country. Let us not pretend that we are better than we really are; the Swiss have many qualities, but software engineering clearly is not.

But it could be.

I would also like to clarify one thing: **Swiss engineers are individually**

brilliant; the problem is the lack of a large number of brilliant teams. Think about the Argentine national football team; it featured for the past 25 years the most expensive and skilled players in the planet, yet it failed to win a single international championship (with the exception of the gold medal in the Olympics.) The situation here is the same. **The engineers are, indeed, great; the typical Swiss team dynamics are horrendous.**

For Switzerland to become a world-class hub for software developers, some attitudes must change substantially, in order to let go some “traditional Swiss values” that do more harm than good in the software economy of the 21st century.

I observe that the biggest problem for setting up a successful software development hub is not the lack of venture capital, or the position in the Big Mac Index, but rather the cultural values that shape the group of people trying to create a software product together. One thing is to tackle the problem of finding and hiring talent; the one nobody is tackling in Switzerland is the problem of keeping talent from leaving. We still view software developers as interchangeable parts.

The good news is that I have seen younger software companies embrace the cultural change, from Geneva, Lausanne and Fribourg to Bern, Basel and Zurich, and that there is hope for the future. By mixing flexibility and trust into a culture of quality engineering, Switzerland could become a major power in the software economy. And the change is happening, right now.

Software is a social process, and as such, it has its own laws, in many ways disobeying those of physics and sociology. A large majority of Swiss entrepreneurs have failed and still fail to open their eyes, to realize that a new economy requires a new social contract. I hope that these lines, written from the trenches, will help driving a much needed change.