RE-Writings

Traceability – Putting the ‘y’ First
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In my two-part quest to set the traceability record straight and to engage in some traceability word play, I thought I would write up a talk I gave at the International Symposium on the Grand Challenges of Traceability in 2007. The key message of my talk, called “Losing Track of the ‘y’ in Traceability…”, was that the observation that it is all too easy to lose track of the ‘y’ behind what we are doing, be we traceability researchers or practitioners. My question to the traceability community was this: how do we get the ‘y’ put squarely at the forefront of all of our traceability minds?

Traceability is not a goal in its own right, it is merely a mechanism to help us navigate through, filter and access information to support many other tasks. I think that the grandest challenge we all face is simply stopping for a moment to take a serious look through stakeholder eyes – ‘y’ do they need traceability in their consideration and amusement below.

The Yo-Yo Challenge
The boredom of a fixed routine

Yo-yos are designed to go down, and then up and down and up and down ad infinitum. What is the point of wheeling a yo-yo up and down like this? It can get a little frustrating after a while and it just makes your arm hurt if you keep it going for too long. With a little momentum it can almost keep going by itself, but physical work is still required to keep it ticking over. Eventually you decide to take a break from all the arm wrestling and so the whole system stops. It is then a lot of effort to get it all wound up and going once again. Have you ever attempted to pass an in-motion yo-yo over to a friend so you can take that break? Can you keep it wheeling up and down together?

Establishing traceability is just like playing with a yo-yo. It is a manual activity that soon becomes a chore, and where up and down translates to click and link and link and click. If you do something repetitive like this you hypnotize yourself and surely forget why you were doing it in the first place. Also, if you cannot hand over a simple yo-yo to a good friend, where it is plain to see what exactly is going on, what chance do you have of handing over the traceability mantle to a colleague when the workings are less visible? People should really be doing things that exercise their brainpower and not their arm muscles, unless they are professional athletes of course. Besides, some games simply aren’t designed for two.

The Yarn Challenge
Chaos over time

So you all know how this one goes – you start out with a nice neat ball of yarn in your knitting bag (that’s wool for the Brits) and by the end of the day it all ends up in a messy knot. Even if you are not a knitter, I can guarantee that despite your best efforts you get tangles in your iPod headphones every time you put them in your pocket. How do these knots and tangles get in there? It is one of the mysterious things in life that seems to happen by pure magic! The more yarn you buy, unravel and work with, the more of a mess you get yourself into.

Maintaining traceability is just like trying to keep your yarn in order. The more time you spend on a project, the more inevitable the deterioration in the traceability and the more time you end up needing to sort out the mess. Furthermore, like knitting a patterned sweater, traceability will not emerge if it is not planned for and built in. Try getting a big yellow Y embedded on the front of a bright red sweater when you are busy attaching the sleeves. It simply won’t happen! If we have to plan for something so simple as knitting to avoid ugly sweaters, why do we assume that traceability patterns can be woven in later?

The Yankees Challenge
People, training, teams and support

I may be a little biased (I live in New York City) but why are the New York Yankees a leading baseball team? What differentiates these professionals from an amateur team? The Yankees undoubtedly have lots of funding and support – the majority of New York City is
rooting for them – but what is significant is that they have skilled players with well-defined roles and responsibilities (e.g., pitchers, batters, catchers, runners, etc.) In addition, they are trained and coached. Do they win if they don’t all pull together on the day? Do they win if they wait until the last innings to do all the hard work? Do they win without exercising a game plan that can adapt to the gameplay?

Likewise, traceability has to be a team effort with the roles and responsibilities needed to do the job defined, and with the necessary skills nurtured and developed. Without a training program, a project-by-project strategy, leadership and support from others, coupled with the all-important drive to succeed, are we really going to reach the traceability major league?

The Yen Challenge

Variable value and return on investment

At the time of writing this article, the value of the dollar was going down against the value of the yen. But, markets rise and markets fall, and we have localized reversals of fortune (even though it would seem that everything is in free-fall at the moment!) How many dollars is my yen worth today? Will it be the same tomorrow? What should I bank on?

Traceability is a really hard sell and most of the time we seem to get away with gambling today on unknown futures. How much does it cost to do traceability and how much do we get back in return? Not only is there changing value over time, the value is also not uniformly perceived by all the parties. Interestingly enough in economics, ‘Y’ represents income. If we focus on the ‘y’ in traceability perhaps we will start to understand what stakeholder value actually means, and learn how to monitor and achieve this economically?

The Yorkshire Pudding Challenge

Supplements and miscellaneous side dishes

A Yorkshire pudding is a bland little pie that complements roast beef and gravy, the traditional Sunday lunch for meat eaters in the UK. The Yorkshire pudding is typically the side dish\(^2\), the supplement, and it is only ever really noticed when it is not there on your plate. It gets its entire flavour from soaking up whatever is around it (usually the gravy).

Traceability is also considered the additional extra, the software development side dish. It is not noticed if it does its job well, but it is absolutely noticed if it is missing or substandard. Perhaps we actually need traceability to be invisible, but just like creating the perfect culinary side dish that doesn’t overwhelm the main meal, getting to this is going to entail a lot of bad tasting experiences.

The Yorkie Challenge

Noise versus trusted companion

To one person a Yorkie is an annoying and yappy little dog that snaps at every passer-by and nips at people’s ankles. To another person a Yorkie is a trusty handbag-travelling companion. The issues of noise and trust are not so unrelated. In a busy world, how do we decide what to pay attention to and what to filter out? Again, much will depend upon personal needs and predispositions.

Can we trust and use the results of our traceability endeavours or is there simply too much noise? This is an issue where the need to understand the ‘y’ literally barks out! The credibility of and resulting confidence in traceability really matters with ever more reliance on automation and third party efforts.

The Yardstick Challenge

Measures and standards

If we want to know how big it is we measure it. If we want to know how heavy it is we weigh it. We have our recognized and agreed yardsticks or measurement instruments for many things that society has agreed to standardise upon. We agree on the units and scales that we use for size and weight, and we know how to transform between preferred variants.

What can we realistically measure when it comes to traceability? The quality? Can we say how good the traceability is on a project? Can we say whether one technique or approach leads to measurably better results than another? Can we predict how importantly in this context, some purists require that it should be served separately, with good gravy in the hollow created by the risen batter, as an independent first course. Food for traceability thought no doubt?
sustainable the traceability is likely to be going into the future? We don’t even have a base language for talking about traceability that we all agree upon.

The Yardley Challenge

Image and marketing

My grandmother is from a generation that uses Yardley products, be they perfume, soap, make-up, etc. Yardley is a fragrance authority best known to many for scent that makes you smell like an English country garden. As a company, Yardley has tried very hard over the past decade to re-invent itself and to gain appeal amongst a younger generation. It even hired the offbeat Helena Bonham Carter at one stage as the face of Yardley. However, it has been difficult to shake off its image as being a brand for traditionalists.

For generation Y, traceability is about as cool as yodelling and considered yet another relic from a bygone waterfall era when it comes to software development. Traceability needs to be made more appealing, attractive and interesting if everyone is going to want to do it or (better) simply to have it always there. If configuration management can look sexy with tools named Subversion, and if Google can make search optimisation a household discussion, what are the marketing options for Trendy Tracy?

The Yeti Challenge

Belief versus evidence

Whether you call it the Yeti, Bigfoot or the Abominable Snowman – who believes in it? Who has actually seen it? Is it a myth or a reality? Who truly knows? If you want to see the Yeti then you have to go to where the Yeti has been spotted, be this Yonkers, Yosemite, Yorkshire, Yemen, Yukon or Wyoming (joke).

We all believe that traceability is critical to the success of a software development project or we wouldn’t be reading this article – but is it really? Where is our evidence? Without evidence to show others we are no different from those who believe in the Yeti! People aren’t going to believe it is necessary and important to do traceability just because we say it is so. Why aren’t we building up a body of evidence to validate and substantiate our claims? Process improvement is a two-way street and researchers need to visit the shop floor and experience a bit of the pain from a project blizzard.

The Yoga Challenge

Flexibility and change

Yoga is often mistakenly thought to be about sculpting a double-jointed body. It is actually more about developing a supple mind. By practicing yoga we re-learn how to breathe, align our body parts, move with ease, and we strengthen ourselves from within to deal with the stresses of everyday life.

The challenge of having enough flexibility to be able to deal with change is a considerable one for traceability systems. Stakeholders and their requirements for traceability change. Irrespective of our best planning efforts, we cannot pre-empt everything up front, so we have to create a framework to help us adapt and grow as we learn about what is needed, what works and what doesn’t.

The Yin and Yang Challenge

Balancing opposites

Yin and Yang cannot exist without each other. Day cannot exist without night. Light cannot exist without dark. Life cannot exist without death. There are always traces of one in the other. There is light within the dark (the stars at night). When there is an excess of Yin or an excess of Yang, things get out of balance.

Many things change when we attempt to set up and use traceability and we have to keep everything in balance when they do. When we change artefacts, their trace relations sometimes change too and the impact can often propagate widely. Trace artefacts and trace relations are our Yin and our Yang. If they do not keep in balance at all times, they become untrustworthy and somewhat useless.
The Yellow Challenge

Happiness and fun

“We all live in a yellow submarine. Yellow submarine, yellow submarine. ... As we live a life of ease. Everyone of us has all we need. Sky of blue and sea of green. In our yellow submarine.”

[The Yellow Submarine – The Beatles.]

Supposedly, Paul McCartney purposely used short words in the lyrics when he wrote this Beatles song because he wanted kids to pick it up early and sing along. It was intended to be a kids’ song, a fun and happy song. Yellow is also the colour we use to characterise our smiling and life-giving sun. It is positive and uplifting.

There are many traceability stakeholders to keep happy. Consumers will only be happy if they have what they need and when traceability is an invisible project lifeline to them. Suppliers will only be happy if their work is a joy to undertake and when the traceability sun keeps on shining. Why can’t they all dream of a life of ease in the yellow submarine?

The Y-front Challenge

Tailoring to fit

Everyone has his or her own preference when it comes to underwear and we are all likely to have a combination of styles in our closets. One thing we certainly all know is that one size does not fit all! Equally, we all know that we should wear other clothes on top of our favourite underwear to be socially acceptable (except for Superman, obviously).

When it comes to traceability, we have lots of potential techniques and tools to use, but no single one will fit all scenarios. We may need to scale up or scale down for size. We may need industrial strength one day and disposable the next. We may need to combine approaches to achieve different layers and levels of traceability for different parties. We clearly need to embrace diversity and help people and projects find what is right for them.

From ‘y’ to ‘y’!

From not ‘y’ to ‘y’ not?

If we address all of the above ‘y’ challenges, will we be any better off? Are these all the pieces of the traceability puzzle? Do these pieces even form a comprehensive whole picture? Unlikely – and I did leave some gaps for you to fill in with your own favourite ‘y’ words.

The so-called traceability problem has been around for many years even though the basic concept of tracing is actually quite simple. Why is that? There are many stakeholders and this is what it probably all comes down to. Who are these stakeholders, why do they actually need traceability and why should other stakeholders trade time in the present to support unpredictable futures? There is no single answer to these more fundamental ‘y’ questions, but surely these are the core ‘y’ challenges that need to be addressed first and foremost so as to assist with all the others?

My parting message is this: we must not lose track of the ‘y’ in traceability, the ‘why’ of traceability. ‘Why trace?’ is the most important question because it leads on to ‘trace what?’, ‘trace where?’, ‘trace when?’ and then, and only finally then, ‘trace how?’ It is time for us all to put the ‘y’ first. It is our best way into tackling the many traceability challenges before us.

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