

Introduction to Innovation Management

Assessment B

By Aista Phillips, Student Nr2126964, May 2022

Selected Innovation (STR casks) that was made by the Dr Jim Swan who was Master Distiller/Blender and consultant for the Penderyn Distillery and many others Distilleries around the world.

Report of 3000 words which analyses:

- The principal drivers for the innovation.
- The barriers and risks faced by the company in developing this innovation.
- The key determinants in the process of the committing to develop the innovation.
- The processes and technologies which the company used to carry this development forward
- The extent to which the development relied on the resources external to the company and the way in which the deployment of these resources was managed.
- How management overview of the development was maintained.
- The extent to which feels this innovation process represents best practice.



Innovations? What it is Innovation?

It is just as simple as that - new idea, new product, new or improved process and so on.

“Innovation is making an idea or invention of goods or services that create enough value for customers to want to buy. Creating unique products and services and getting them to market before competitors can benefit a company, often being critical to its reputation and continued success. Understanding the process of product innovation and reasons to use it can help you develop professional capabilities valuable in any industry. “

(By Indeed Editorial Team, April 15, 2021)

J. Schumpeter, the first to use the term, interpreted innovation as a new combination of resources motivated by an entrepreneurial spirit. Common sense also means understanding innovation as an innovation that has gained public recognition through commercialization, transformation into a product or service. The common feature of all interpretations of the concept of “innovation” is the new consumer value of the product created in the process of innovation.

Most researchers provide the following classification features:

- * According to the technological parameters of innovative change objects;
- * Scientific and technical significance;
- * The cause;
- * Frequency of use;
- * The place of innovation in the microeconomic system;
- * The scope of the specific implementation;
- * The scale of novelty.

Yes, we need to create something new that would have a good use in any industry we are. Being in the whisky industry and working as Master Blender I need not just look after New Make Spirit distilled in Distillery but to find barrels where whisky will start their maturation. In addition, after to create whisky that people would enjoy. Is that Innovation or it is a creation? Or it's an NPD (New Product Development). Whichever way you will look at it, I am happier if customers are happy and enjoying a drink. However, I would like to talk about casks or type of the casks that to make them my tutor Dr Jim Swan has created the process, the “formula”. He was an “Einstein” in whisky industry that helped so many Distilleries and Cooperages. Person full of knowledges and ideas. Person that taught me all what I know and I am able to do my work and continue his legacy. I would like to talk about STR casks as the innovation, casks that are widely popular between so many whisky makers. First, we have a look what is it product and process innovation in general.

So, what it is product and process Innovation?

Product innovations include:

- Acquisition of essentially new goods and services (for both consumer and industrial use);
- Use of new materials, semi-finished products, components.

Process innovations include the use of new technologies (usually more productive), new methods of organizing economic activities, various management innovations.

Improvement of innovations is the result of medium and small scientific developments, on which significant changes (modernization) of existing products, technologies and methods of organizing economic activities are based.

Product Innovation I think will be the most famous of all Innovations. It is the creation of new or improvement of the old products that would solve problems and would be good help for consumers and customers.

New products can fall under any type of innovation. They can be radical or disruptive, but usually they are actually incremental and sustaining by nature.

There are 4 types of Innovations:

- Sustaining innovation. Most innovation happens here, because most of the time we are seeking to get better at what we are already doing. We want to improve existing capabilities in existing markets, and we have a clear idea of what problems need to be solved and what skill domains are required to solve them.
- Breakthrough innovation. Sometimes, as was the case with the example of detecting pollutants underwater, we run into a well-defined problem that is just devilishly hard to solve. In cases like these, we need to explore unconventional skill domains, such as adding a marine biologist to a team of chip designers. Open innovation strategies can be highly effective in this regard, because they help to expose the problem to diverse skill domains.
- Disruptive innovation. When the basis of competition changes, because of technological shifts or other changes in the marketplace, companies can find themselves getting better and better at things people want less and less. When that happens, innovating your products will not help — you have to innovate your business model.
- Basic research. At breaking innovations never arrive fully formed. They always begin with the discovery of some new phenomenon.

(By Greg Sattel June 21, 2017)

Creative/developing new products companies looking what consumers need, what is in demand? You can go back on the right track and product innovation can help in the short or long way. Product Innovation can help companies to grow, to find new market it is a great benefit in the end.

Product or process improvement it is important and can be meaningful to the new product or process.

Innovation in whisky Industry.

“Innovation in the whisky industry is moving at a rate of knots, with distillers and blenders exploring increasingly creative avenues in their quest to develop new and exciting flavours”

(Becky Paskin, editor of *Scotchwhisky.com*)

Casks Innovation in Whisky industry plays a big role, as it gives opportunities to create profile of the flavours and it gives opportunity for the whisky makers to get on the market as well as it creates a huge story to promote whisky for the sales. I am totally agreeing with John Glaser when he says - “The motivation for me is we should always aspire to make ever greater whisky, as our understanding of how to make great whisky improves and techniques improve. It’s not so much innovation but challenging the way we do things, to see if there’s a better way, within certain parameters.”

(The Experimental Whisky Blender: John Glaser | PORT Magazine)

a) Back in 2006-2007, Dr Jim Swan came with the idea to the cooperation with a specific need -to find a reliable cask that would be alternative to ex-bourbons and suitable for whisky maturation at the

time when it was a big shortage of good ex-bourbon barrels. The main driver for this innovation was shortage of ex-bourbon casks and it's where Dr J. Swan wanted to help to the consumers (distilleries) to have availability to have good casks to start whisky maturation. He knew he could find good barrel toasting and charring skills in Portugal (result of decades of making and toasting barrels for the brandy in Portugal to the Sochu in Japan). Therefore, he came with the idea to J.Dias cooperage in Portugal.

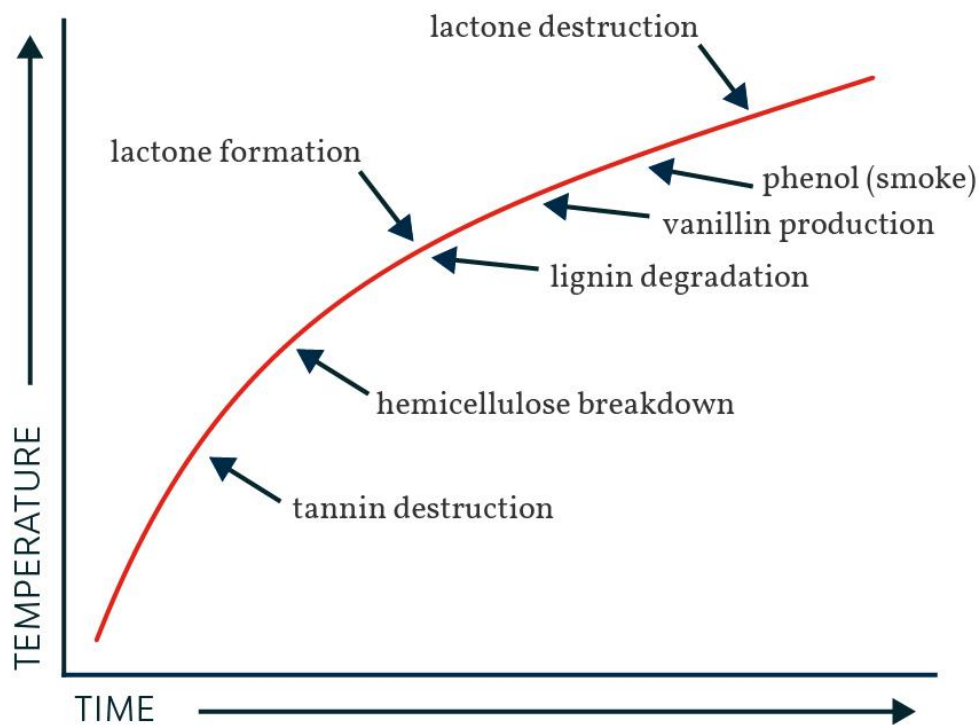
b) Developing this process was time-taking and as well it took even longer time on the experiment side. Dr Jim Swan was working with Distilleries, like Penderyn and others. In addition, Dr Jim Swan carefully supervised this last part of the experiments with constant reports being transferred to J.Dias, where was require to do some adjustments or fine-tuning being processed according to what he needed – with further experimentation later. The key determinants in this process was hands on knowledge and experience of J.Dias coopers, that is why Dr Jim Swan came at the first place as he knew that all already was there. Everyone at J.Dias was motivated to make it going. No such big risks were involved other than planning purchase of ex-wine casks ahead (to avoid stock rupture). It brought a lot of extra work, peacetime, good visibility and word-wide notoriety to the company, which helped them a lot to grow and consolidate export and domestic markets.

c) Before starting the process in practice, many ideas discussed with Dr Jim Swan. What wood types to use, types of wine (reds, whites) casks had been filled, and age of barrels and many others. Ex-wine casks that held wine for the several years would be heavily impregnated with the wine. So, using for the whisky it would be too rich that would have too rich wine notes, as well it would be too dark in the colour and it would be not enough oak character. The idea than become to use ex-wine barrels gently scraping them from inside to bringing some of the active oak, held deeper in the stave, closer to the surface. And at that time R&D started in the cooperage in Portugal, many experiments were made with the different woods, different temperatures, different ways of de-char and making the toasting and charring. To have correct temperature and time in toasting it is very important looking in what flavours we want to achieve. Toasting proses was involved putting barrels on the open fire and burning of oak shavings from the ex-wine barrels, what was scrape from the inside. The temperature, time and amount of the mix wood shavings - it was a created formula for the innovation process.



“As temperature increases, chemical compounds are created and, if the temperature gets high enough, eventually destroyed (see graph below for examples). The same concept applies with exposure to heat over *time*. Short or long exposure to heat creates its own changes in the oak.”

(Oak 101)

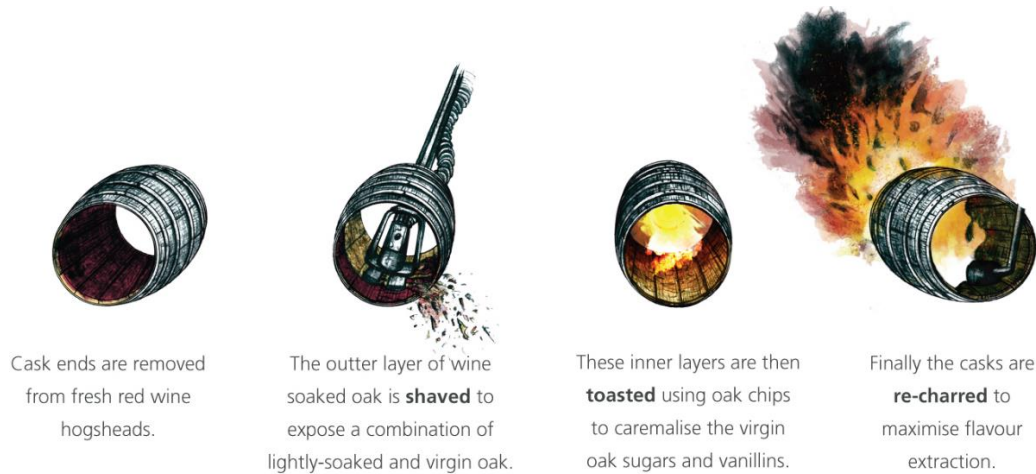


d) The rejuvenation of casks is not a new thing. People have been re-charring casks for a long time now. Therefore, it will be Bourbon barrels, hogsheads and some Sherry casks. To make an STR casks was more focus as well in to the better use of the other casks such as ex-wine. Whilst cask rejuvenation via shaving and re-charring is not new, the ‘clever’ part of the Dr Jim Swan is STR process is leaving enough residual ‘wine effect’ whilst reactivating the oak by toasting and re-charring. This is a very difficult balancing act. It is also worth noting that thermal reactivation, whether it is by toasting and/or re-charring, does not recreate exactly the flavour potential of virgin oak. In particular, lactones (coconut, cocoa, toasted, nutty, creamy, woody, maple), tannins (astringency and colour) and eugenol (cloves) are not recreated. Consequently, the balance of wood extractives in regenerated casks, such as STRs is rather different from those of a new cask, which makes them interesting and different. And that where looking through the innovation point, we can say that it was a Disruptive innovation by the Greg Sattel, where they improved process with the technologies that they had.

It took some months to complete the final formula. That became a big innovation in the whisky industry. New product was created not just because this was new but because it was needed to the customer. While Dr Jim’s Swan’s major contribution to the process - he had the need in hands and he brought up the right charring formula. The formula that helped to get a rich vanilla/fruitiness profile. In addition, he had chemical & sensory skills to know that none of the working people in this project

had. I still think the STR casks is in fact result of hard work and technical input from a lot of people (distillers, blenders, coopers, supervisor of the project inside J.Dias).

So, what it is STR casks?

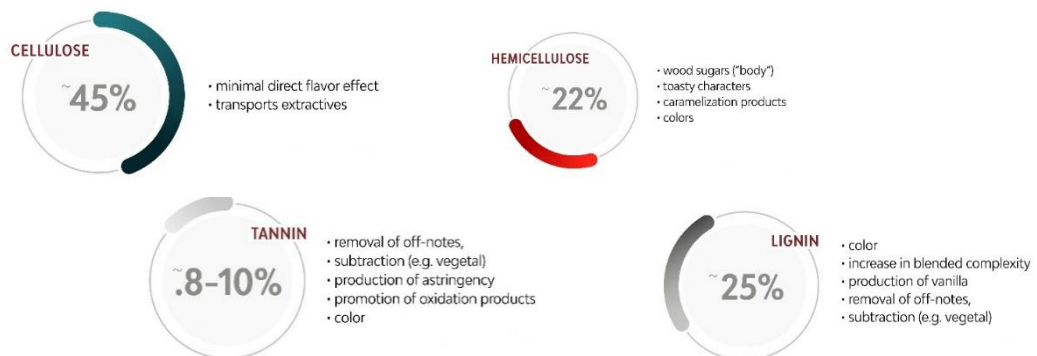


“The STR cask balances influence from both the new and used oak to create a powerful combination of rich fruit, oak, spice and maritime peat smoke.”

(Anthony Wills, Kilchoman Founder & Managing Director)

So many people saying it in the different ways. However, as Dr Swan created it stands for: Scraped, Toasted and Re-charred.

- S stand for Scraped: around 4mm is scraped from inside of the ex-red wine cask to remove wine residue that was still left in the casks. With the wine residue, it could be still left some unwanted notes as such as sulphur (sulphur it is OK for the wine that kills bacteria but it is not nice in the whisky). However, it scraped not too far and it's still let to have a little influence of the wine fruitiness.
- T stands for toasted. Toasting proses where heat breaks down lignins (a polymer found in plant cells) and hemicellulose into wood sugars. Variation in time and temperature it can create different flavours in whisky, anything from sweet vanilla notes to toasty, woody or nutty. Toasting wood breaks lignins into its chemical components: synapealdehyde, syringealdehyde, and vanillin, from there we got characteristic vanilla flavours.



(Oak 101)

- R stands for re-charring. Barrels are put on the open fire where flame caramelises those wood sugars. As well, charring increases the surface area of the inside of the barrel. In this process, wood cracks and depends on the charring level (#1, #2, #3, #4) it creates like “crocodile skin” which works as a carbon filter. Carbon cleans unwanted/unpleasant notes and helps to speed up maturation process. Charring time could start from 15 seconds to 60. It all depends on what level you want to reach.



- 1 Toasted
- 2 Toasted and light char,
- 3 Char #1
- 4 Char #2,
- 5 Char #3,
- 6 Char #4

Selecting STR casks as well, it looked at the Oak type. Ex-bourbon casks are made using American Oak (*Quercus Alba*) but most of the wine casks made using European Oak (*Quercus Robur*). American Oak have a tighter wood grain, is softer and have notes of Vanilla, Coconut, and some caramel. Where European Oak got its coarser grain, it more heavily has herbal, spicy notes. It is very important to choose first type of Oak depend on the flavours you would like to achieve.

e) Dr Jim Swan chose to work with J.Dias cooperage as he knew that they will have all needed resource to develop his idea. But yes, they still needed to get additional wood for the experiments and it was not a big task as they already had ex-wine casks suppliers in Portugal, France, US and Spain.

f) J.Dias cooperage it's a small family run business that was established in 1935. It's already run by the fourth generation. Sandra Dias, who is owner and General Manager, was very much involved in the process and helped with her expertise the same as Marco Moutinho, who supervised and worked very closely with Dr Swan. All, management and coopers, were working together, so they knew that they are going correct direction. J. Dias got their own toasting formulas and that's where they very carefully managing time and temperature.

g) As Dr Jim Swan worked with many Distilleries as a consultant, he could increment his supply capacity to his clients; he came to other cooperages with that done formula but in the different ways. Distillery in Taiwan - Kavalan. Kavalan process was different. Both on de-charring, they are using existing technology in the cooperage machinery business and re-charring using gas burners - completely unlike the original formula and with different results from natural fire.

I think it's the innovation even if other cooperages that Dr J Swan worked with using slightly different ways then original formula was set up with the J.Dias, it is still an innovation that took place and time after a lot of experiments to finalise that fine tune. It is an innovation that help many Distilleries to

carry on maturing their whisky in the time of the ex-bourbon shortage, as well it helped to create new whiskies. And not just to make but as well to create an awards winning whisky.

- Kavalan Solist (Vinho Cask) won the 'Best Single Malt Whisky in the World'. "Solist" - was matured in STR casks that was created with Dr Swan and Miguel Martin in Spain. It is another company that Dr J. Swan shared his expertise and his formula. Whisky is full of exotic fruits, as a STR signature a lot of Vanilla, wood spice, some dried fruits.
- San Jose, CA (May 18, 2020)— STR Single Malt, from San Jose's 10thStreet Distillery, was recently awarded a Double Gold from the 2020 San Francisco World Spirits Competition
- Rich Oak @46% released and bottled by Penderyn Distillery, won double gold in San Francisco World Spirits Competition, 2022. And yet again used STR casks, created by Dr Swan and J.Dias cooperage, matured whisky.

h) Intellectual Property over this product (if existing?) would be shared by many people, I guess. However, what J.Dias took at the end of the day is that Dr Jim Swan and the STR was a breakthrough in a very difficult moment for distilleries due to shortage of ex-bourbon casks. Not sure if any patent or "royalties" exist. It was a more hands-on operational intervention (making bridge with the coopers) and less contractual. I think Dr Jim Swan tried to patent or to at least call for himself the IP of the project, but I do not think that would be at all possible. Scraping/recycling/re-toasting-charring barrels was a thing in motion already. Technology/machinery was available and improving and practical know-how/skills was all in coopers' heads for decades. The only thing he could submit would be a formula "time vs. temperature".

Starting talking about STR casks innovation at first, I was thinking: is it innovation or is it product improvement? And as the process as such was existing for the many years to start, I thought that it's just improvement but as per Kahn and others – "Product improvements: Enhancements that improve form or function. A product improvement will replace the original product so the original product will no longer be available to customers." STR casks was not replacing, they did not replace they are an additional cask that are used. Maybe to start the idea came as to replace ex-bourbon casks but it stayed and become a very successful in the whisky industry.

As I mention in my report about STR innovation it was done at the time when it was needed most. And it did it's work as it helped so many Distilleries. But now STR casks are used not to replace ex-bourbon and yet they are very popular and there are so many whiskies that are created using them as a part of the make-up formula. It's an interesting innovation where helped for the cooperages to build there marked, for the Distilleries to create new whiskies. It's seemed it is a win - win situation but yet again was not set up a patent or there are no "royalties" to pay to... you could see that Dr Jim Swan was working towards of helping and to passing his ideas as a consultant. And I think it is again showing the personality of the great man that had a passion in what he done not thinking of the personal greed.

Looking thought the proses what was involved to created I definitely think that it was an innovation and not just improvement or NPD. As it involved so many experiments, it was involved a lot of R&D.

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Becky Paskin Editor. About Becky. Becky Paskin has been writing about food and drink for around 10 years, but worked as a bartender and restaurant manager some six years prior to swapping the shaker for a pen. ... Enter your email address below to keep updated with the latest news from Scotchwhisky.com. GO.

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