

Saimaa University of Applied Sciences
Faculty of Tourism and Hospitality, Imatra
Degree Programmed in Hotel, Restaurant and Tourism Management

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Molecular Mixology. Case: Molecular Days in the Restaurant Bar&Bistro.

Thesis 2017

Abstract

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Bar&Bistro, 50 pages, 4 appendices

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Molecular mixology is the way of serving a drink in an unusual shape with unconventional texture by using scientific approach to make drinker's experience more interesting and to improve drink's qualities. The purpose of the thesis was to understand the definition of molecular mixology and to investigate how to organise the project connected with molecular cocktails.

The theoretical section of the thesis covers the history of molecular mixology, its main principles and techniques. Likewise, thesis opens theoretical issues about legislation concerning promotion and serving of alcohol beverages. The information for the theoretical part was gathered mainly from different web articles, but also from literature. The empirical section presents the project "Molecular week", which was carried out in the restaurant Bar&Bistro in December 2016.

The final result of this thesis shows that Finnish people seem to be open for all innovations in bar industry and ready to pay for the new experience, according to the project implemented in Imatra. Moreover, perspectives of this bar study seem to be really optimistic. The analysis of customers' responses shows that for progressive and developing future of molecular mixology, a restaurant serving molecular cocktails has to be located in a bigger town than Imatra. All in all, the thesis can be applied as a full instruction for implementing an event connected with molecular drinks.

Keywords: molecular mixology, bar, cocktail, alcohol legislation, alcohol promotion, cocktail list

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1 Introduction

The following work is a project-based documentation of the overall thesis process. The initial idea of the thesis originated from the author's passion for the chemical engineering (connected with author's previous education) and restaurant industry. Organizing the project and understanding the molecular mixology culture was a result of applying academic knowledge from both degree programmes and the author's working experience.

Even though the thesis is project-based and the primary goal is planning and organizing the project, one of the thesis' aims is the analysis of how Finnish people react to the new trend of bar culture: molecular mixology; and to answer the question: would molecular mixology be popular in Finland? What would be customer's opinion if instead of usual Margarita they will get red spheres bursting in the mouth and filling it with sweet alcohol? From the author's point of view, there is only one way to analyse a real situation of a perspective of molecular mixology in Finland: it is a project, and do a research afterwards based on the customers' feedbacks. All steps of organizing the project connected with molecular drinks will be shown in the thesis – advertisement issues, legislation, a cocktail list organizing and analysing the results of the project. To get clear project results, the author conducts quantitative research in the format of an interview with each customer.

Finland is an interesting country to analyse because it has its drinking culture, which is primarily connected to Scandinavian and European practices. Finns consume quite average amount of alcohol per year – around ten litres (YLE 2015). According to Professor Olli Alho (2002), the nation has a reputation for being “professional” drinkers, but consumption of beer and wine has been increasing for last years, so drinking behaviour starts to be more decent. The reason could be also an influence of central European or Mediterranean drinking habits, especially among urban middle-class young adults and slightly older Finns with higher education level.

Project called “Molecular days” was organized from 14th to 17th December 2016 and held in the restaurant Bar&Bistro, which is located in Imatra, Finland. It was

important that, the project must benefit not only the author's future career and professional developing, but it must also increase sales for the restaurant. The restaurant has the possibility to introduce the new trend for locals and tourists, to announce itself as a really developing and modern place and to attract new customer segments.

The second chapter tells a story of molecular mixology, defines techniques and preparation methods. The author explains how molecular mixology "came on the scene", who was the pioneer of the new bar culture and what chemicals mixologists have to know to create molecular drinks and what the beginner of molecular mixology has to know before he immerses himself into the topic.

"Project development" chapter explains the theoretical background of the project, such as alcohol legislation issues, alcohol advertisement and creating a cocktail list. This information could be useful for every restaurant, which is planning to stage events connected with serving of alcohol beverages.

The chapter named "Molecular Week" clarifies all the steps of the project: from ordering the chemicals till marketing of the event and defines how author divided her responsibilities with the staff of Bar&Bistro. The chapter demonstrates a detailed event-organizing process including all stages and deep analysis of customer's needs. This chapter of the thesis also introduces a case company: Bar&Bistro and explains why it was chosen.

The last chapters draw a conclusion of the thesis and elucidate the final result: did the author reach the goals and does the thesis answer for the question raised above.

2 Molecular mixology

Molecular mixology is a special field of culinary studies of mixing cocktails by using the analysis and techniques founded in chemistry and physics to understand and experiment with cocktail ingredients on the molecular level, by changing texture and shape of the drink. Molecular mixology is inspired by the knowledge from molecular gastronomy, which works similarly with food ingredi-

ents. The purpose of this culinary science is a manipulation of states of matter to create new flavours, tastes, textures, and formats that improve the drink and make the customer's experience more intriguing and delightful. The practice becomes more and more popular among trendy mixologists every year. (Graham 2016.)

2.1 History of molecular mixology

Molecular Mixology is the way of serving a drink in the molecular form, with unusual shape, texture, and drink's condition. There are special techniques, where cocktails are presented in a form of jelly, gel, foam, sphere or sorbet. Molecular mixology gives a possibility to "eat" a cocktail. (Klyos 2011.)

Popular Russian molecular bar Modabar (2016) mentions that first molecular cocktail was created already in 1840 – it was a well known layered cocktail or Pousse-café (layers of cocktail depend on the density of the drink). Nowadays molecular mixology primarily works with physical properties of a drink. It uses such techniques as foaming, gelation or freezing with liquid nitrogen.

Nicolas Kurti, professor of physics, and Hervé This, director of the institution "Food Science and Culture" under the French Academy of Sciences, became fathers of molecular mixology. By uniting forces, they held the first seminar on molecular gastronomy in 1992. (Ivanova n.d.)

The mass movement in the bar industry, based on the molecular mixology started with "Molecular Mixology Master class" organized in Hemingway Bar at the Ritz in Paris October 12, 2005. Hervé devoted bartenders to mystery liquids' transformations: marbles, foams and jellies. After the seminar, the term "molecular mixology" came into use. One of the most famous cocktails, prepared using molecular art, became Picasso Martini, created by Colin Peter Field, head-bartender of Hemingway bar. As in any business, in mixology, there is a set of basic concepts and actions, which brings, as a result, a high-quality cocktail. (Ivanova n.d.)

One of the most controversial topics of molecular mixology is a group of adversaries of everything synthetic. Many people mistakenly believe that molecular

cocktails are “artificial” and harmful. It is not surprising, considering the fact that molecular mixology often uses steaming flasks with liquid nitrogen, injectors, and chemical ingredients. The first reaction of people is “Is it safe to eat that?”.(Suleimanov 2014.)

Actually, molecular mixology uses only natural ingredients of a biological origin, which favourably act on the human’s body. Origins of raw materials usually are vegetables, microorganisms or seaweed. These supplements are used in slight amounts and were approved by standards of European Union. (Evira 2016a; Evira 2016b; Evira 2016c.) Mixologists operate with modern laboratory equipment, which helps to create magical cocktails.

Molecular mixology is closely related with molecular gastronomy, which appeared 25 years ago. There are two main stories of the success of molecular gastronomy – Ferran Adria from “El Bulli” in Spain and Heston Blumenthal from “The Fat Duck” in Great Britain. Ferran Adria opened techniques of a spherification and creating “gastronomy foam”, which had to replace cream and eggs in the kitchen. Heston Blumenthal shows his knowledge in an ability of fat to hold the taste qualities of ingredients, for example, to create a dish, where three different flavours felt in turn, one by one – basil, olives, and onion. (Sodasifon 2016.)

Potential of molecular gastronomy is huge. Speaking about molecular mixology, Horeca Magazine with Filipp Kondratenko (2009) did a significant research concerning the history of “high-tech drinks” and their future. The first bartender who worked with molecular cocktails is Tony Conigliaro, who has collaborated with Heston Blumenthal, Eben Klemm, Eben Freeman and Angel Chocano. Some of his conceptual ideas were also used in usual bars. Famous bar manager Eben Freeman from New York brought molecular mixology into the mass market. His primary goal was to show the simplicity of molecular mixology, to show something new. He was an author of Bacardi Mojito of the Future: spheres with lime aroma and mint, immersed in a mix of Bacardi, soda, and xanthan gum.

Molecular Mixology gives a possibility to experiment with classical cocktails, which are well-known and loved, for creating new, interesting textures and aro-

ma combinations with the help of chemical transformation. Simultaneously, molecular mixology gives a wider range of cocktail variations because of scientific approach and mixologist's fantasy. (Sodasifon 2016.)

In the opinion of Alexandr Suleimanov(2014), winner of award "The longest molecular cocktail in the World", it just looks like everything already was made and tasted, but gastronomy is still developing. Molecular gastronomy came to replace fusion style. New style changes the consistency and shape of products beyond recognition. Egg with egg white inside and yolk outside, foamed meat with gherkin jelly, syrup from crabmeat, ice cream with tobacco exist not only in fantasy books but also in real life.

At the end of 19th century, famous chemist Bertlo predicted that in 2000, humanity stops to eat traditional food and will use nutritional tablets. However, it did not happen, because human needs not only nutrients, but also taste, flavor, aroma, beautiful serving and pleasant conversation during the meal. That is why molecular gastronomy did not go towards the way of nutritional pills (food for astronauts does not count), but creates magical recipes of appealing dishes by the world famous chefs, which cannot be made in the normal kitchen or be bought in a shop. (Borodina n.d.)

Molecular gastronomy with molecular mixology is the most important culinary art nowadays, judging by ratings: in 2002 El Bulli was named as the best restaurant in the world, because of molecular dishes. After that, "molecularists" took the first place every year in the main industrial rating Saint Pellegrino World's 50 Best Restaurants. Ferran Adria with "El Bulli" was the winner for several years, but once he was beaten by his main competitor Heston Blumenthal (Saint Pellegrino 2016). In 2014 first place was given to his disciple, chef of Danish restaurant "Noma". Molecularists occupy most of the positions in the ratings. After 2002, molecular gastronomy has been the main mainstream of restaurant industry and every person who considers himself a connoisseur has to have some basic knowledge about this trend. (Modabar 2016.)

Ergo, the widespread introduction of molecular mixology is still under the big question, but it does not mean that it is not going to develop further. All revolu-

tionary ideas are coming at the junction of science; so, from this fusion, there is a good chance to wait for something radically new. For example, it could be an interesting phenomenon to create synthesis of molecular technologies and principles of health eating.

2.2 Molecular mixology principles

A molecular cocktail is a quite difficult definition. The possibility to change the structure of a cocktail becomes a reality after appearance of special equipment – freezers, lasers and syphons, which affect the mix of substances changing the consistency by using gelatine, sodium bicarbonate or liquid nitrogen. Besides this, often modification of consistency becomes possible after mixing the components with the same chemical composition. (Pyhtina 2011.)

Pieces of fruit are levitating in a drink and forget about gravity or balls full of fruit juices are ready to explode in the mouth – suchlike innovations revolutionized the World of Cocktails. Moreover, as it turned out, this may be readily available for understanding of the process and successful production. The easiest example of molecular cocktail is a layered one. Because of different density of liquids, layers are not mixing, what looks quite unusual and surprising. (Klyos 2011.)

Using of different foams makes cocktails more complicated looking, and transformation to foam is possible not only from liquids, but also from solids. There are oceans of variations for experiments; bartender does not even need to use liquids for the cocktail. The main factor that differentiates molecular drink from usual one is not-standard use of component's properties and getting the new qualities by applying chemical or physical phenomena. (Klyos 2011.)

In molecular mixology, spherification method is also widely used. By this technology bartender creates e.g. a martini, which has to be eaten with a spoon: vermouth, gin and olive marinade are mixed with xanthan gum and calcium chloride and then poured into the water solution of sodium alginate. In the end, drink looks like a drop in a shape of olives, jelly outside, and liquid inside. Serving is also kind of interesting: in the martini glass waiter brings only one “magic” olive, which bursts in the mouth, spreads on the taste buds with a taste of classic cocktail. (Klyos 2011.)

With same method, bartender can make Mojito and even aerify it by high pressure, and bubbles of carbon dioxide will pleasantly tickle a palate. Totally different and experimental things happen by using ultra-low temperatures, lasers, centrifuge and other difficult equipment. In the bar, even specialized on the molecular mixology, it is too expensive to use them. (Sodasifon 2016.)

The process of creating scientific cocktails uses different equipment. First, it uses pharmaceutical or chemical scales, very accurate with 0.01 g sensitivity, because difference in 0.02 g will give totally different result – different taste and consistency of a drink. Of course, bartender cannot manage without professional blender, which helps to make homogeneous mass from all products. As in every other bar, mixologist needs a syphon. Having some glassware with unusual design and special spoons could be a good idea, too. Molecular mixology uses food chemicals, such as sheet or granular gelatine, acacia, calcium chloride, various emulsifiers, dyes and gases. (Modabar 2016.)

The experienced, talented and enthusiastic bartender can easily handle molecular techniques. However, it seems that customers are not ready to consume these cocktails in big amounts. Based on the experience of Mari Hyppänen (2016), there could be a few reasons for that: the first, drinks in Finland still play a supporting role – customers order them in addition to the dish, not to enjoy them as a single component of the meal. The second reason is that people are still conservative towards cocktails, and can easily order Margarita in an avant-garde bar. The third factor, prices of the molecular cocktails are usually much higher than those of their simple equivalents.

From another side of bar desk, playing with molecules seems not so easy, as it looks for the customer. The cocktail has to be bartender's peak of performance and abilities, and it means drink should consist of only quality products. Some specific ingredients have to be kept in a dry storage without temperature changes and "neighbour" products. (Modabar 2016.)

Another obstacle for bartender is a long preparation time. Foaming is the only fast procedure, so it is the first technique, which bars use to introduce molecular art. Gelation, production of spheres takes about 15-20 minutes for one cocktail.

In restaurant with intensive customer flows, it is a luxury, because especially for such complicated cocktails, bartender needs a separate working area. (Kondratenko 2009.)

A cocktail created by molecular experiments is a fascinating object, the structure of which is far from the classic liquid or puree. Molecular drinks can be supplied in the form of jelly or foam, crystals, and even ice. Of course, the effect of a cocktail on the human body remains the same, to prove that it is not even necessary to use a breathalyser: there is still an alcohol, which penetrates in blood and makes a customer drunk. However, because of taste and an aesthetic perception, the molecular cocktail can cause a storm of new sensations, thanks to its unusual texture and form. (Kondratenko 2009.)

Molecular mixology uses mainly four different techniques:

- ❖ Emulsification,
- ❖ Basic spherification,
- ❖ Reverse spherification,
- ❖ Gelification. (Pyhtina 2011.)

2.2.1 Emulsification

The emulsification technique is used to transform any liquid into a light and tasty foam. The main ingredient is a soy lecithin. Soy lecithin is a protein contained in soy that has the unique property of stabilizing foams. The emulsifier can be used to reach an unusual equilibrium between air and liquid, allowing the incorporation and retention of air bubbles into any watery solution. Emulsification process requires special equipment such as shakers, hand blenders, or N2O whippers. (Molecule-R 2016a.)

The method of preparing cocktails by emulsification technique is shown in Picture 1.

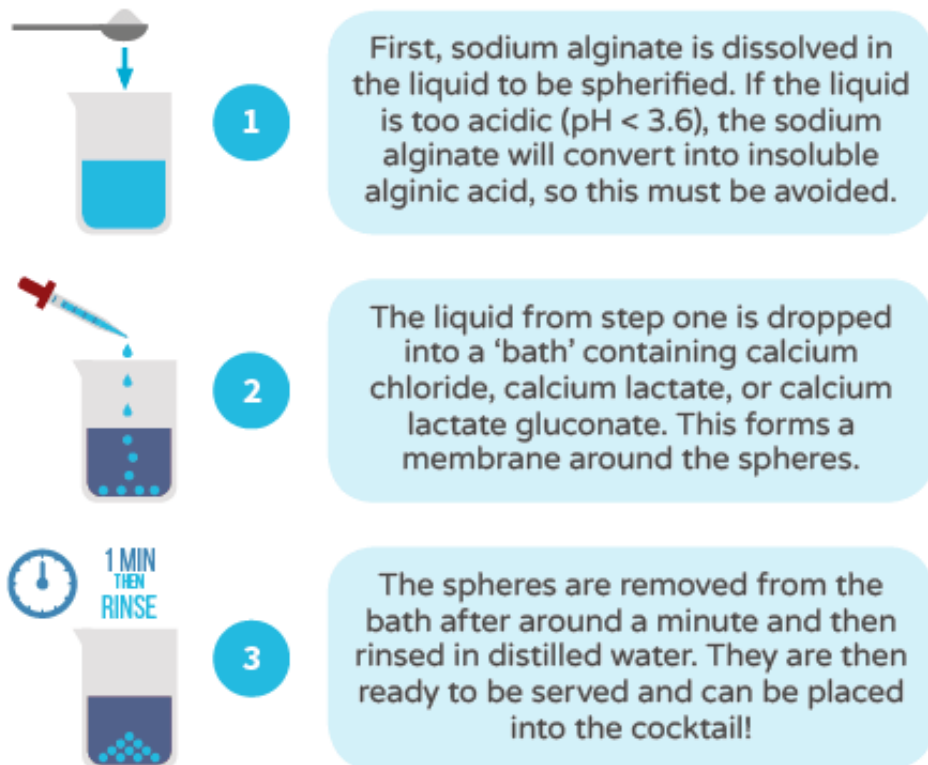


Picture 1. Emulsification process (Brunner 2016)

2.2.2 Basic spherification

The basic spherification technique is ideal to create small caviar beads to wow the pals with their tasty liquid interiors. Main ingredients are sodium alginate and calcium lactate. When the sodium alginate preparation is dropped into the calcium bath, calcium ions react with the alginate molecules to create a thin gel membrane that forms the caviar bead's wall. The gelification process will continue even after rinsing the spheres, as some alginate molecules have remained trapped inside the gel membrane, thickening the wall as the result of interaction with the calcium. (Molecule-R 2016c.) Spherification process method is shown below in Picture 2.

THE METHOD

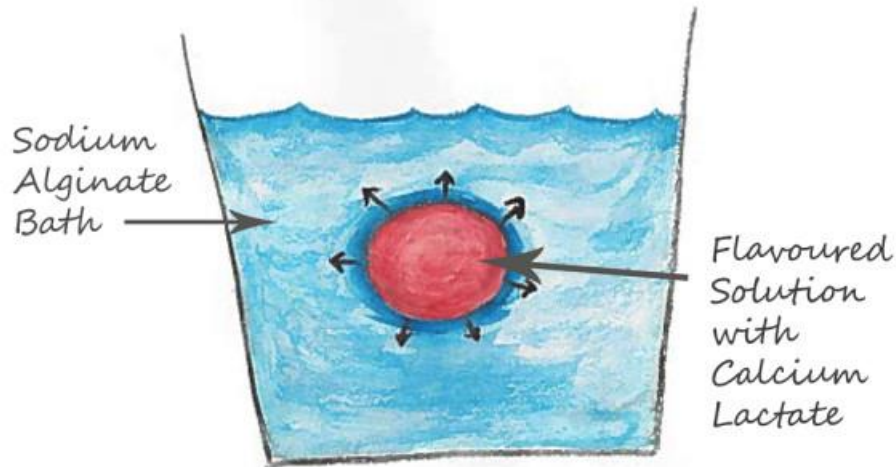


Picture 2. Spherification process (Brunning 2016)

2.2.3 Reverse spherification

The reverse spherification technique is an ideal method to encapsulate a liquid into a large sphere that will explode in the mouth. When a frozen solution containing calcium lactate is submerged into the alginate bath, alginate molecules align and bind together to form a gel membrane thanks to a reaction involving calcium ions. The sphere's membrane will continue to develop as long as this binding process occurs in the alginate bath, but gelification process will stop when the spheres are rinsed. (Molecule-R 2016c.) Reverse spherification process is explained in Picture 3.

REVERSE SPHERIFICATION



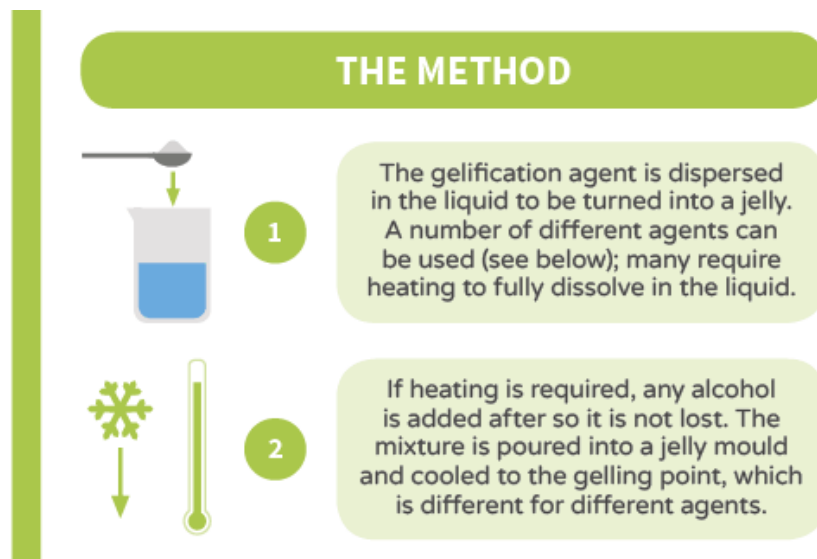
The gelling layer "grows" outwards in the direction of the arrows. The gelling membrane is made from the sodium alginate solution and will stop forming as soon as it's taken out of the bath.

The Flavor Bender

Picture 3. Reverse spherification process (Giramuk 2015)

2.2.4 Gelification

Gelification is the process of converting a substance into a form of gel. Liquids are turning into solids with the help of a special gelling agent, which usually come from natural sources e.g. agar-agar, gelatine, carrageenan, gellan gum, pectin, and methylcellulose. Mostly, these gelling agents are presented in a dry, solid form, which needs to be hydrated (dispersed in liquids). The result of gelification could be entirely different: from hard to really soft gels. (Logsdon n.d.; Molecule-R 2016b.) The way of gelification process is explained in Picture 4.



Picture 4. Gelification process (Brunning 2016)

2.3 Cocktail additives

Food Safety Agency is Finland's state agency, an authority responsible for the food safety. All following information about food additives could be easily found from Evira website.

2.3.1 Sodium alginate

Sodium alginate E401 is a salt of alginic acid. From the chemical point of view, it is a naturally occurring polysaccharide consisting residues of D-mannuronic and L-guluronic acids. The physical properties of the additive E401 are following: it is a powder with cream or light brown colour, which is highly soluble in water, retains moisture, has a stabilizing effect and, in general, is the gelling agent. The use of sodium alginate in the food industry is based on its ability to form gels. Sodium alginate is produced from red and brown algae, in the Philippines and Indonesia. The US, France, China and Japan are major producers of sodium alginate. There is also a small production in Russia, India, and Chile. Alginic acid salts are good enterosorbents that bind and excrete radionuclides and heavy metals, as well as accelerate the healing process. Further, alginic acid reduces the level of cholesterol in the blood. As Evira informs, E401 can be used in nearly all foods. (Evira 2016c.)

2.3.2 Calcium lactate

Calcium lactate E327 - lactic acid calcium salt looks like a white powder, almost odourless, which is slowly soluble in cold, but quickly soluble in hot water. It is used in food industry as an acidity regulator, humectant, emulsifying salt or antioxidants synergist. Calcium lactate is highly soluble and easy to digest, without irritating the stomach lining, so it is a good calcium donor and is used for enrichment of fruit juices. Calcium content in the lactate is higher than in the gluconate. Calcium lactate is used as a power supply for yeast bakery products, as a hardener for canned fruits and as a substitute for table salt, antioxidant synergist and may be used in almost all foods, which can be used with additives. There is no maximum number of daily intake. (Evira 2016b.)

2.3.3 Lecithin

Lecithin E322 is an herbal substance having strong surface-active properties, which is often used as a food additive, emulsifier. Its name comes from the Greek word lekithos - egg yolk, which is a rich source of lecithin. Lecithin E322 is a permitted alternative of E476 (Polyglycerol or lecithin of animal origin). Lecithin is the primary vehicle for delivery of nutrients, vitamins, and drugs to cells. A deficiency of lecithin reduces the effectiveness of the impact of medicines. Lecithin is a powerful antioxidant that prevents the formation of highly toxic free radicals in the body. Lecithin may cause allergic reactions, but may be used in almost all foods, which may be used with additives. Because of the possibility of allergies to egg or soy lecithin, it should be notified in the list of ingredients of the food. There are some restrictions on use in oils and fats. (Evira 2016d.)

2.3.4 Agar- agar

Agar-agar is an emulsifying, stabilizing and thickening agent, prepared from certain Rhodophyceae red seaweed. It may be used in nearly all foods, from jams to jelly cups. There is a limitation of the maximum amount of jams, jellies, and marmalades. Acceptable daily intake (ADI) is not defined. (Evira 2016a.)

3 Project development

Erik Larson and Clifford Gray (2011,5) define a project as a temporary aspiration initiated to create some unique service or product, which has a defined beginning and end in time with established objective and goal, which probably has never been done before. To illustrate the nature of project process they created project life cycle (see Figure 1).The life cycle shows that the project has a limited life period and there are different steps with various levels of effort and focuses on the term of the project.

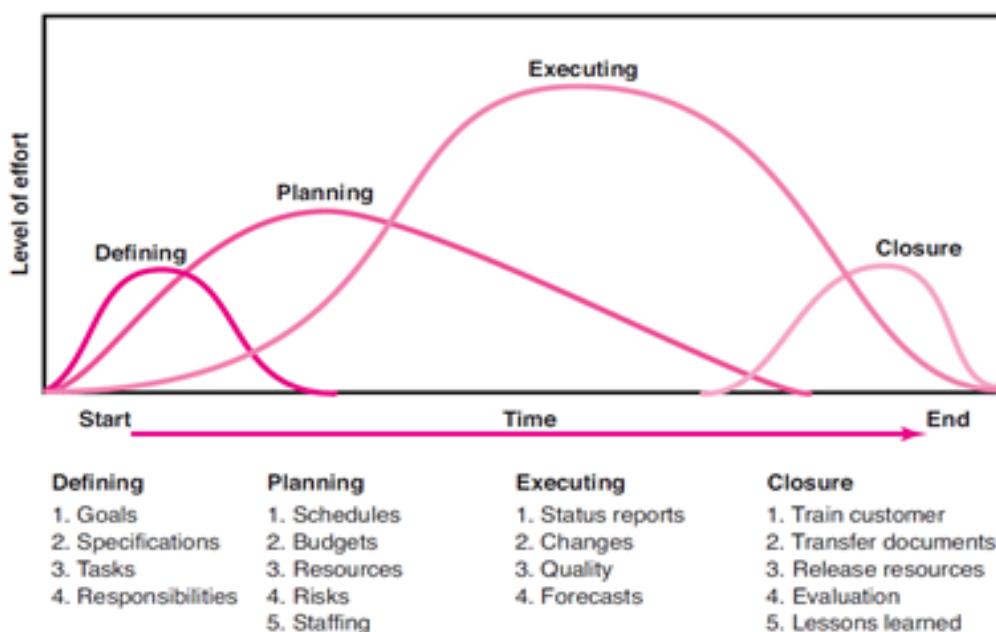


Figure 1. Project Life Cycle (Larson&Gray 2011)

Every project goes through four stages: defining, planning, executing and delivering. The starting point begins when the project is given the green light. (Larson&Gray 2011, 7.)

On the defining stage, objectives and project specifications are defined, goals are established, and responsibilities are divided. Planning stage has the higher level of effort and, plans are developed and determined throughout this stage: what will project bring for the organizers, when will it be organized, who will get the benefit, what quality should be reached, what is the budget going to be. During the executing stage, the product or service is produced, a major part of the

work is done, and organizers analyse the necessity of changes. Closing stage usually includes delivering the project product for the customers and post-project reviews. The organizer does not have to follow all the steps of the project life cycle, but it helps depict the timing of the main tasks during the process for the project groups (Larson&Gray 2011, 7-9).

3.1 Planning a list of cocktails

When creating a cocktail list, it is important to remember that the list does not go against the business idea. Likewise, it is significant to know for what kind of a target group the list is created, such as what kind of customers are at the bar and what kind of a target group the list has to attract. The purpose of the list is that drink has to serve customer's desire and preferences, and at the same time, however, it has to reflect and show what the style of the bar is. (Aho, Autti & Siitonen 2009, 112.)

A cocktail list is always created according to alcohol legislation, but simultaneously has to comply with the gastronomic and beverage regulations which require that cocktails with short ingredient list are listed before long mixes, that cold drinks are mentioned above hot ones (Aho et al. 2009, 112). A cocktail list should be carefully planned: it starts from simple drinks and moves forward with more complicated because this makes it easier for its readers to choose a suitable beverage for themselves.

Bar assortment always affects the choice of a cocktail list, but even small selection of alcohol gives a possibility to create different and various cocktails. For small bars it is important to keep a small selection of alcohol so that warehouse will not be filled with unused bottles.

In the cocktail list, drinks tend to be grouped for example by preparation method, by ingredients or beverage type. It may be labelled, for example, like rum, gin or vodka –based cocktails, or another method -shot drinks, after dinner, before dinner, and so on. Besides, the newest trend in bar culture is grouping cocktails by country of origin, or by some special theme such as a movie drink list, which includes cocktails from classical old movies. Nevertheless, the most important thing is that in any grouping of cocktails by categories is to facilitate

the customer's choice. Sometimes beverages should be also photographed, to show what kind of beverage is offered to a consumer. The aim is to give a clear impression of the drink's taste. (Aho et al. 2009, 112.)

When the cocktail list content is ready, it is time to design the appearance of the whole list. The assortment of list's designs is wide-ranged, and the most common ideas are billboards, printed table stands and usual booklets; it depends on the place and place's atmosphere. The list must also be made so, that staff knows the methodology of every drink and all ingredients to avoid awkward situations while serving customers. (Aho et al. 2009, 112.)

There are also some special requirements concerning cocktails in Alcohol Law, which can affect a cocktail list planning. If there is more than one alcoholic beverage in one drink, the maximum total amount of alcohol in one cocktail can be equal to that of 4 centilitres of strong alcoholic beverage, except beer-, cider-, sparkling wine- or red or white wine- based cocktails, which may contain a maximum of 2 cl of strong alcoholic beverages or 4 cl of mild alcoholic beverages in addition to the principle ingredient. Cocktail's total amount of alcohol is equal to 4 centilitres of strong alcoholic beverage. 2 centilitres of mild alcoholic beverage such as liqueurs or fortified wines compare with 1 centilitre of strong alcoholic beverage. (Valvira 2016a.)

3.2 Calculation of drink prices

When talking about the price of a product, it means the monetary value. The right price is what the customer is willing to pay for this product or service which affects the purchasing decision, and of course, the ratio of price and quality. Generally, price of a product influences the quality, as perceived higher quality products are more expensive. (Lahdenkauppi & Rinta-Huumo 2004, 28.)

Pricing must take into account many factors affecting the prices such as customers, competitors and of course laws and regulations. In general, prices have an impact on the demand for products or services; it means the number of customers. Thus, the customer's ability to pay and their purchasing power are affected by the seller's pricing. (Lahdenkauppi & Rinta-Huumo 2004, 28.)

The law of alcohol pricing does not have upper or lower limit. Social and Health affair office may issue amendments under the Law of Alcohol pricing, if needed, but these provisions have not been published so far. According to alcohol act 33 a § discounts connected with amount of alcohol, such as “buy two, pay one”, are prohibited (Valvira 2016a). In serving alcohol drinks, the general rule is that the alcohol beverages can be dispensed by one dose for a customer at a time. As a result, quantity discounts do not come across with alcohol legislation (Valvira 2016b).

Restaurant can price alcoholic drink cheaper than normal when situation is connected with a group of loyal customers. Special loyalty rates are permitted (Valvira 2016b). Beverage pricing is selected according to the principles of profitability, which is set by the owner of a restaurant. The pricing can be settled by the demand, costs and competitiveness, but generally, drinks are priced in accordance with costs and profit. (Lahdenkauppi & Rinta-Huumo 2004, 28.)

3.3 Promotion

On 1 January 2015 Finland published stricter laws concerning alcohol advertising, as Montonen from Social and Health Ministry informed in her presentation. Law from 2008 concerning alcohol beverages was already quite rigorous, since amending the Alcohol Act there were following restrictions:

- alcohol advertising on TV only from 21 till 7,
- ban on alcohol ads in cinema,
- ban on volume discounts,
- ban on price discounts in the media (except the case when offer is valid at least for two months without interruption).

However, from 2015 government decided to be even stricter with alcohol advertisement. Following restrictions on alcohol marketing entered:

- ❖ No more outdoor nor indoor advertisement (except in retail and on premise sites and public events);
- ❖ Time restriction also applied to radio;

- ❖ No promotion activities which involve taking part in a game, lottery or contest, or if it involves any textual or visual content produced by consumers or content to be shared among customers;
- ❖ No ads in digital games and gaming apps in consoles, tablets nor mobile phones or video games;
- ❖ No competitions “in real life” nor social media connected with alcohol. (Montonen 2015.)

Alcohol advertising is subject to legal restrictions designed to limit the adverse effects caused by alcohol. The law prohibits advertising, indirect advertising and other sales promotion of strong alcoholic beverages exceeding 22% alcohol by volume, except in certain separately provided circumstances, such as in premises where strong alcoholic beverages are served or retailed. The advertising, indirect advertising and other sales promotion of mild alcoholic beverages containing a maximum of 22% alcohol by volume are, as a rule, permitted but it is subject to certain restrictions laid out in the law. For example, advertising must not be carried out in a public place, be targeted at minors or be contrary to good manners. (Valvira 2015.)

4 Molecular Week

An idea of a project connected with molecular gastronomy appeared in the author’s mind already in 2013, when author changed education field from Chemical Engineering degree programme to Hotel, Restaurant and Tourism Management and when the author had possibility to try molecular delights once in a restaurant in Saint-Petersburg. These pieces of food art were so stunning and surprising, that dream of experimenting with these amazing techniques came to author’s mind. During her studies, author did not have time and possibilities to read any extra literature concerning molecular gastronomy. That was the reason why the author decided to write a thesis concerning molecular mixology to explore the topic deeper.

The author’s opinion was to connect the project with her profession and to organize a project in a bar for analysing customers’ responses about trying molecular cocktails. The author concluded to concentrate only on mixology side of

molecular gastronomy since she has more knowledge about bartending than kitchen.

After determination of the thesis idea, during the planning stage, the author started to develop herself concerning food chemistry. The author found many good sources on the Internet about molecular cocktails and contacted few specialists of molecular gastronomy in Russia to get advice on chemical ingredients and recipes. Molecular mixology seemed to be a challenge for the author because at the moment of writing the thesis she had not been studying chemistry for more than two years and some knowledge was lost through these years. Luckily, molecular mixology is not the most difficult chapter of physics and chemistry, so the author was ready to try the new recipes. Bar&Bistro was chosen as a partner for the project and all organization processes concerning Molecular week were decided to be handled by the author, except alcohol purchasing and pricing. The author with managers of Bar&Bistro defined the schedule, estimated budget for the project and the expected number of customers. By the most optimistic view on the project of managers Bar&Bistro, restaurant would serve around one hundred customers and they decided to increase the number of staff during the Molecular Week.

Next step of the project was the executing stage. The author came to work every day four hours before the project started to make necessary pre-preparation of chemicals, which had to be mixed beforehand, and to pre-organise her working table. During the product serving, the author was analysing the cocktail recipes to change them so, that she would obtain the best possible quality of the drink.

On the closing stage of the project lifecycle (Figure 1), the author was analysing the results of the project based on the customer feedback, the feedback given by managers of Bar&Bistro and was evaluating herself according to theoretical part of the thesis and mistakes popped up during the project process.

4.1 Bar&Bistro

Bar and Bistro is a cosy place, located in the town centre of Imatra. It is a small town where middle class and blue collar are sitting in the same restaurant dur-

ing a lunch break, and this quality of the town gives possibility to analyse many market segments at the same time. (Hyppänen, 2016.)

Manager of the restaurant Mari Hyppänen informs that target audience is quite wide ranged - families with kids, sports fans, tourists and business customers. The restaurant has a long menu and a drink list to fulfil the needs of every customer category and has all the needed licences to serve alcohol.

By the information given by Mari Hyppänen, Bar&Bistro was founded in 2014 and it is connected with Center Hotel Imatra, since it is located under the roof of the same company Imatra Bistro OY. Restaurant capacity is around 90-100 seats. During the summer, restaurant expands outside for extra 90 seats.

4.2 Choosing the date and the place

As it was mentioned before, author made a partner agreement with the restaurant Imatra Bar&Bistro to organize a project on its territory. Manager and author, after long discussion, came to the conclusion, that project will be organized during one working week, after pikkujoulut (Christmas parties in Finland for companies, schools and even friends, which are arranged in restaurants during December) somewhere at the end of the year 2016. The final decision was to handle the project starting from 14th December (Monday and Tuesday were days-off in Bistro that week) till 17th December – one working week of the restaurant. During Molecular Week cocktails were served from 18 till 21, so it is not so difficult for the author, since every cocktail takes a lot of time and energy. Usually in restaurant, it can be considered as the most popular and profitable period of a day.

Company Bar&Bistro was chosen because of the modern vision on the future development and the readiness to try something new. The author has been working in the business for three years and knows all secrets “behind the curtain” such as the pricing policy, the alcohol assortment, the target market and so on.

4.3 Ordering the chemicals

Few months before the project, author discovered articles and videos on YouTube about molecular cocktails and created a picture in her head, what types of cocktails will be served and what chemicals are needed.

In Finland, there are no distributors of chemicals for individual usage, so the author had to check other countries. Chemicals should be produced under European law and regulations, so the best choice for order was Germany, a country with almost as strict laws about food additives as in Finland. Germany has its own Amazon website, where they have quite cheap delivery and needed assortment of chemicals for molecular gastronomy.



Picture 5. Chemicals for molecular mixology

4.4 Cocktail list

The idea of creating a cocktail list was to show customers every technique of molecular mixology and to use different types of alcohol for every taste. The author and managers of Bar&Bistro decided to use six different types of alcohol,

especially liqueurs, because these cocktails were positioned as after dinner cocktails, and even as a dessert.

Applying the theoretical knowledge from previous chapters helped to make a cocktail list as right and clear as possible. The principle of “list building” was to organize cocktails by amount of ingredients: from simplest ones to more complicated. The author and managers gave names with an accent on “magic” appearance of a drink.

Pricing was on the shoulders on Bar&Bistro, and they decided to choose price nine euros and ninety cents, so customer will make a choice not because of the price, but because of ingredients; it gives possibility for customers to try all cocktails equally. At the same time, nine euros ninety cents is an average price for cocktails in Bar&Bistro, and since author paid for chemicals from her own pocket, restaurant had to cover only alcohol costs. The drink list also included two versions of non-alcoholic cocktails. (Appendices 1 and 2)

4.5 The cocktails

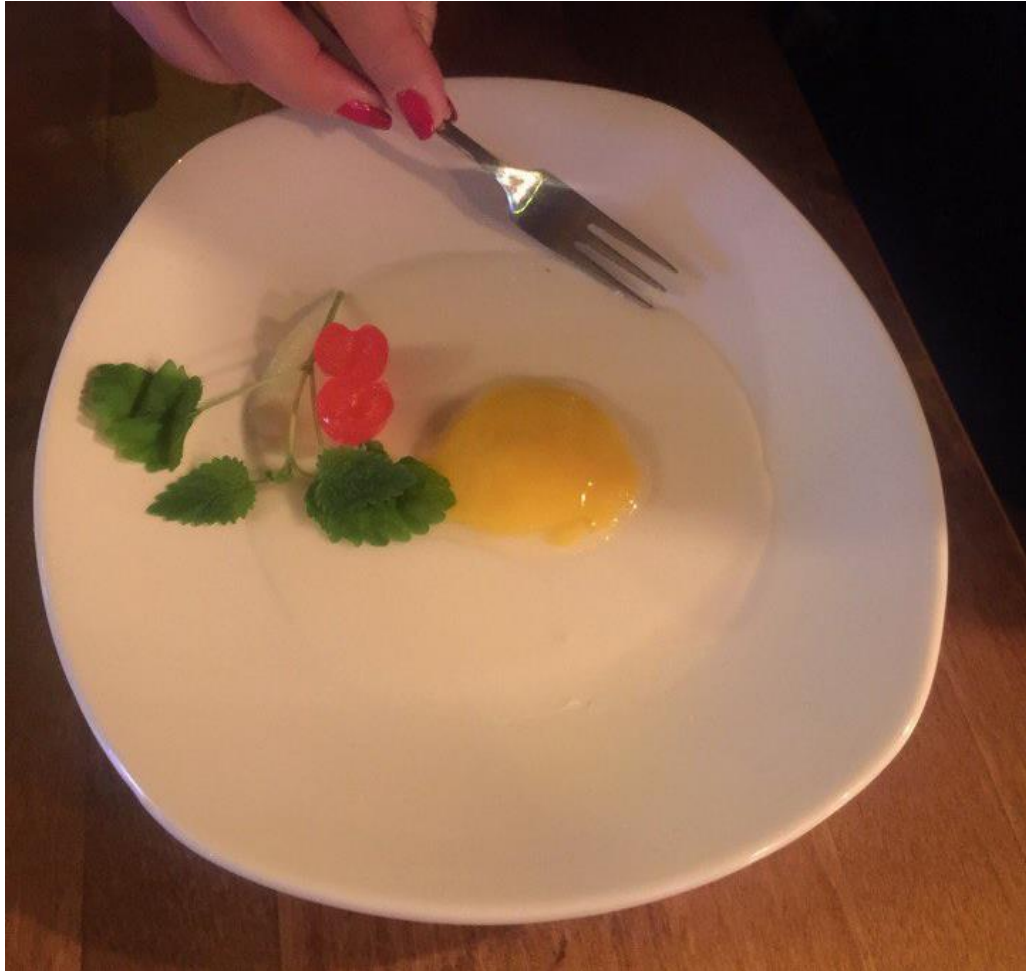
The author decided to use all molecular mixology techniques during her project to give customers a clear picture of this bar study.

1. Magic tequila

Cocktail was made by using emulsification technique and quality of jelly candies to absorb alcohol. Twenty-five grams of jelly bear candies were submerged into tequila liquid for twelve hours and were served in the small bowl on the “pillow” of lemon foam, made by mixing lemon juice with soy lecithin and emulsified by hand blender. Unfortunately, there is no picture of the cocktail to demonstrate.

2. Fried egg

The white base, imitating the egg white, was prepared from mix of yoghurt liqueur and agar-agar by gelification technique. The yolk was made by reverse spherification from mango puree mixed with calcium salt and washed in sodium alginate bath. In alcohol-free version yoghurt liqueur was replaced by yoghurt. (Picture 6.)



Picture 6. Cocktail “Fried egg”

3. Heinäsirkka (Grasshopper)

The cocktail was created only by emulsification method. Coffee liqueur was mixed with thick cream and blue coloring and was decorated by foam of mint liqueur whisked by hand shaker with soy lecithin. Alcohol free version includes coffee and mint syrups instead of liqueurs. Unfortunately, there is no picture of the cocktail to demonstrate.

4. Frog’s Lake

The cocktail was an interesting fusion of a dessert and an alcohol drink. Green “caviar” was made by spherification technique from mint liqueur and was used as an addition to vanilla ice cream with decoration with popping sugar. (Picture 7).



Picture 7. Cocktail “Frog’s Lake”

5. Magic caviar

Red pearls imitating caviar were created by mix of Triple sec, strawberry liqueur, cranberry juice and red colouring with sodium alginate. The cocktail was decorated with a cookie. (Picture 8).



Picture 8. “Magic caviar” cocktail

4.6 Pricing

As it was mentioned before, price was the same for all cocktails, despite the ingredients. However, the author, to be sure, made calculations to compare costs of cocktails and final restaurant price.

Average price for the cocktails is nine euros and sixty-five cents. To cover some extra expenses, which can appear during the project, administration of Bar&Bistro rounded the price for nine euros and ninety cents. Price seems to be reasonable and not overstated, and can be paid by almost every target customer category.

Calculations are shown in Table 1:

Name	Amount	Procurement price	Sale price	Price per litre
Frog's lake		1.67	9.9	
Mint liqueur	4 cl	1.07	5.5	26.98
Vanilla ice cream	20 cl	0.6	5	2.99
		1.67	10.5	
Heinäsiirikka		2.4	9.9	
Mint liqueur	2 cl	0.5	2.75	26.98
Coffee liqueur	2 cl	0.5	2.75	26.98
Cream+ colouring	4 cl	1.4	4	9
		2.4	9.5	
Fried egg		3.26	9.9	
Mango puree	300 g	2.19	5	7.30/kg
Youghurt liqueur	4 cl	1.07	5.50	26.98
		3.26	10.5	
Magic tequila		1.735	9.9	
Tequila	4 cl	1.47	6.50	35.9
Lime juice	2 cl	0.04	2	4.78
Gummy Bears	25 g	0.225	1	9.98/kg
		1.735	8.50	
Magic caviar		1.405	9.90	
Strawberry liqueur	2 cl	0.5	2.75	26.98
Triple sec	2 cl	0.7	4	38
Red Colouring	drop	0.15	2	109
Cranberry juice	2 cl	0.055	0.50	
		1.405	9.25	2.75
Average price			9.65	

Table 1. Cocktail pricing

4.7 Promotion

Advertisement of the project was started one week before Molecular Week. There was a complicated problem in front of the author, because she had to take into consideration all alcohol laws and regulations concerning alcohol advertisement. The most difficult part of the advertisement is that restaurant had to “hide” words concerning alcohol, drinks, and beverages under some neutral words. The idea was to use the word “dessert”, because author was going to use mostly sweet ingredients in cocktails, and there is a fine line between molecular cocktails and food – only alcohol percentage. Thus, author and restau-

rant Bar&Bistro had a chance to attract customers without getting a penalty. However, at the same time, customer would easily understand that molecular desserts are somehow connected with alcohol, based on a picture of glasses on the poster (Appendices 3 and 4). Moreover, the chosen method of advertisement does not require any extra costs.

Posters with advertisement were spread in Saimaa University of Applied Sciences, Saimaa Vocational College and among local restaurant and hotel businesses. For students of Saimaa University discount ten percent was provided. The idea was to attract professionals and future specialists of restaurant industry, who would be interested in getting more information concerning new trend of bartending. The author did not find any events concerning molecular mixology handled in Finland, so it would be the only one possibility for the people interested in bartending to develop themselves as bartenders about science of molecular drinks.

The staff of Bar&Bistro, together with the author, spread information concerning the project by social media, as private users, not as representatives of the company, to avoid alcohol law violation. Author agitated friends and friends of friends to come for the new experience by publishing photos of cocktails in Facebook, Vkontakte and Instagram (Pictures 9 and 10). Following pictures were posted on the author's Instagram account and were reposted by the author and by her co-workers to Facebook pages and Vkontakte. In a certain sense, this method of promotion can be called as social media marketing, because it is a way to promote certain products or services through social networks even if publications were made by private users (Technopedia 2016).

Despite the main method of advertisement being a social media ad, word-of-mouth promotion method appeared during the project. Word-of-mouth is an oral or written recommendation by a satisfied customer to their friends, as for prospective clients of a good product or service and which is considered to be the most effective form of promotion. It cannot be called an advertisement, because advertising is a paid and non-personal communication. (Business Dictionary 2017.)



Picture 9. Advertisement of Molecular Week through author's own Instagram account



Picture 10. Advertisement of Molecular Week through author's own Instagram account

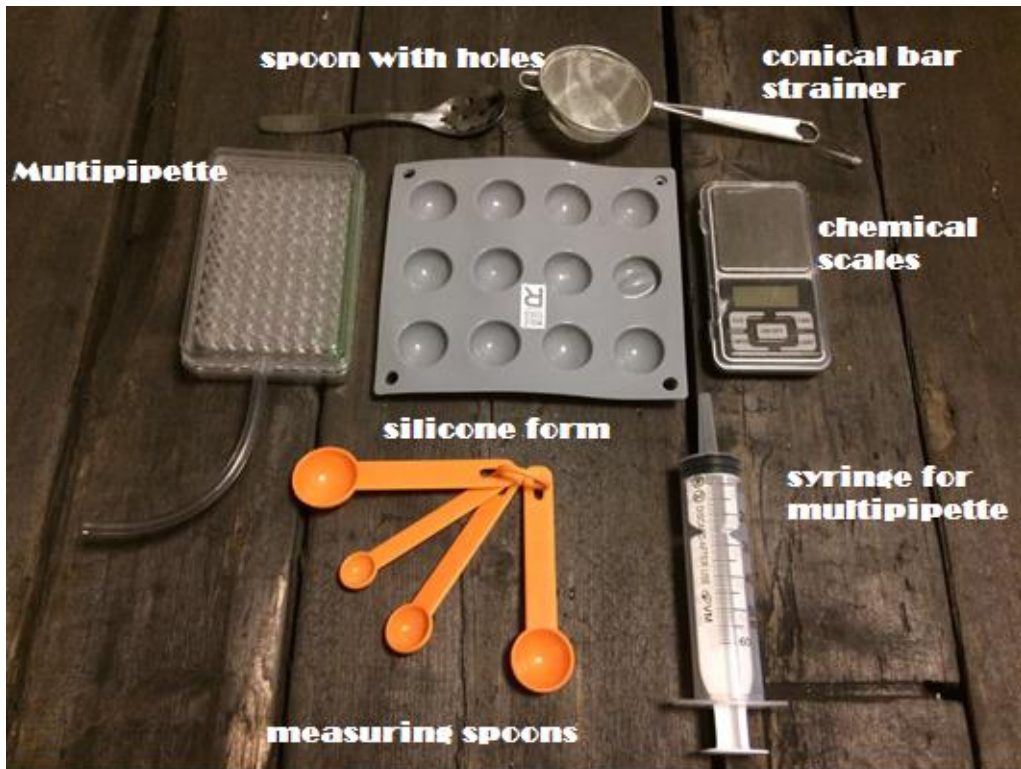
5 Evaluation

5.1 The event

On 13th December 2016, the author spent whole day making the final samples of the cocktails and checking them before serving. She presented the cocktails for the Bar&Bistro staff to get advice and a professional evaluation. The last changes about decoration were made and the author made a list of things to be done next morning before the start of the project.

On the first day of the project, the author came to Bar&Bistro to make all needed preparations before the first customers. She prepared green caviar from mint liqueur for “Frog’s Lake” cocktail and red one for “Magic caviar”, packed them into vacuum food containers and mixed alginate bath for reverse spherification technique, which was used in “Fried egg” cocktail. She organized her working place so that all needed alcohol, chemical and equipment would be easy to access in the zone of visibility.

During the project, the author was using hand blender and the equipment shown in Pictures 11 and 12: multipipette for spherification technique, silicone form for reverse spherification, spoon with holes for catching spheres from alginate bath, measuring spoons, conical bar strainer and chemical scales.



Picture 11. Equipment used during the project



Picture 12. Red and green "caviar"

At 18.00, as soon as the project got started, first customers were greeted to try cocktails. One table was reserved in advance, the customers were celebrating birthday and decided to entertain themselves with molecular cocktails. It was a group of young girls, who were really interested to try something new. Despite the fact that the author was really nervous, since it was a new experience for her, customers were supportive and patient about timing, even if preparation of the first cocktails took more time than the author had expected. Afterwards, they were happy about the cocktail testing and shared their emotions through social media.

First two days of the project were quiet, the author served only fifteen customers in total, but probably word-of-mouth works well in such a small town as Imatra, as Bar&Bistro welcomed almost forty customers, who were ready to try new type of cocktails. During the rush hours, the author got panic a few times, but it was understandable, because for her it was the first time of organizing the project only by herself. Same time, the restaurant staff was in a hurry even without the project: accidentally Friday 16th and Saturday 17th were busy days and the author had to help waiters with serving tables. However, waiters made a great job, they advised customers to try molecular cocktails by encouraging them with attractive explanation of the cocktail tastes. Throughout the project hours, waiters visited tables and asked for feedbacks and customers' feelings.

Overall, it was a successful project. At the end of the Molecular Days, all pre-made cocktails were sold out, and managers of Bar&Bistro were satisfied with money what company received. From a deeper insight, the project was a challenge for the author: is she able to continue to work with molecular cocktail further or has she just overestimated herself? Contrary to the author's stress, the project went smoothly without any big problems.

5.2 Self-evaluation

The author is not a specialist of event organizing and cannot call herself a professional in bartending, but education in Saimaa University of Applied Sciences gives her possibility to organize the project on a high level, for a person with not so big experience. In the author's opinion and her supervisors from Bar&Bistro,

cocktails were well chosen: there were many techniques of molecular mixology and different types of alcohol presented. Cocktail list was not short, but at the same time not too big for four days project

Unfortunately, the cocktail list did not follow all alcohol laws and regulations, because the author forgot to write the amount of alcohol for every cocktail. This mistake was found after the project was handled, so there was no chance for improvement, but luckily Bar&Bistro did not face any problems concerning this violation. Probably failing happened, because the author did not explore the laws as accurately as it was necessary, because it is clearly described on Valvira's web-site:

When alcoholic drinks are advertised, the size and alcohol content of the portion have to be mentioned. The advertisement must state in centiliters what constitutes, for example, a "large tankard" of ale or a "glass" of red wine. It is recommended to always notify of the price of drinks. At least on request, the prices of all the drinks sold on the premises must be available on the licensed premises. (Valvira 2016a).

The author suggests that probably the weakest part of the project was the promotion. Posters and social media posts about Molecular Days were properly designed, but advertisement campaign started too late. It was not fully author's fault, because during development discussions managers of Bar&Bistro decided to combine a party for loyal customers with beginning of Molecular Days, but when it was cancelled, dates of Molecular Days was not established till sixth of December, so promotion was approached only on seventh of December. For a good project advertisement it was too late, there were not so many people as planned, who came to taste the cocktails, but for a small town like Imatra fifty-three customers is still a good result. The author evaluates herself for grade four, as she struggled to organize the project in the best possible way, but there is always something to strive for! If promotion was approached two weeks earlier, the author would be more satisfied with her work.

6 Customer feedback

6.1 Method and data collection

As it was mentioned in the introduction chapter, to get a clear result of the project, the author conducted a small quantitative research in the format of face-to-face interviews. After serving the drink, waitresses asked every customer about their feelings and emotions about the drink and wrote the results for the author, who was preparing cocktails and did not have possibility to talk with every customer face to face. Bar&Bistro managers did not want to disturb customers with written reviews. Instead, they thought that calm discussion for getting feedback about the new experience is usually a good decision, which gives a customer feeling of an extra service. Questions did not involve social or ethical issues, so the third step of the research process was skipped.

Quantitative research is a research, which tends to produce numerical or statistical information by generalizing results from a larger sample population and which is used to quantify attitudes, opinions, behaviours, and other defined variables. Quantitative research uses numerical data to formulate facts and make a statistics about the population of interest. (Lowe 2007, 13.)

Quantitative data has structured collection methods such as various forms of surveys:

- Surveys (online, paper, mobile, face-to-face interviews),
- Observations,
- Secondary data. (Lowe 2007, 13.)

A quantitative method was chosen because the author had to generalize opinion of Finnish people concerning molecular mixology by interviewing a large amount of respondents: qualitative research usually involves only small number of non-representative cases. The goal of the research was to measure the incidence of various views and opinions in a chosen sample: Imatra, which represented the whole population of Finland.

6.2 Results

In total, fifty-three customers tried molecular cocktail. Eight of them were students of Saimaa University of Applied Sciences and one was from vocational college. Ten customers were tourists (seven Russians and three Swedish) and the rest of the customers were local people.

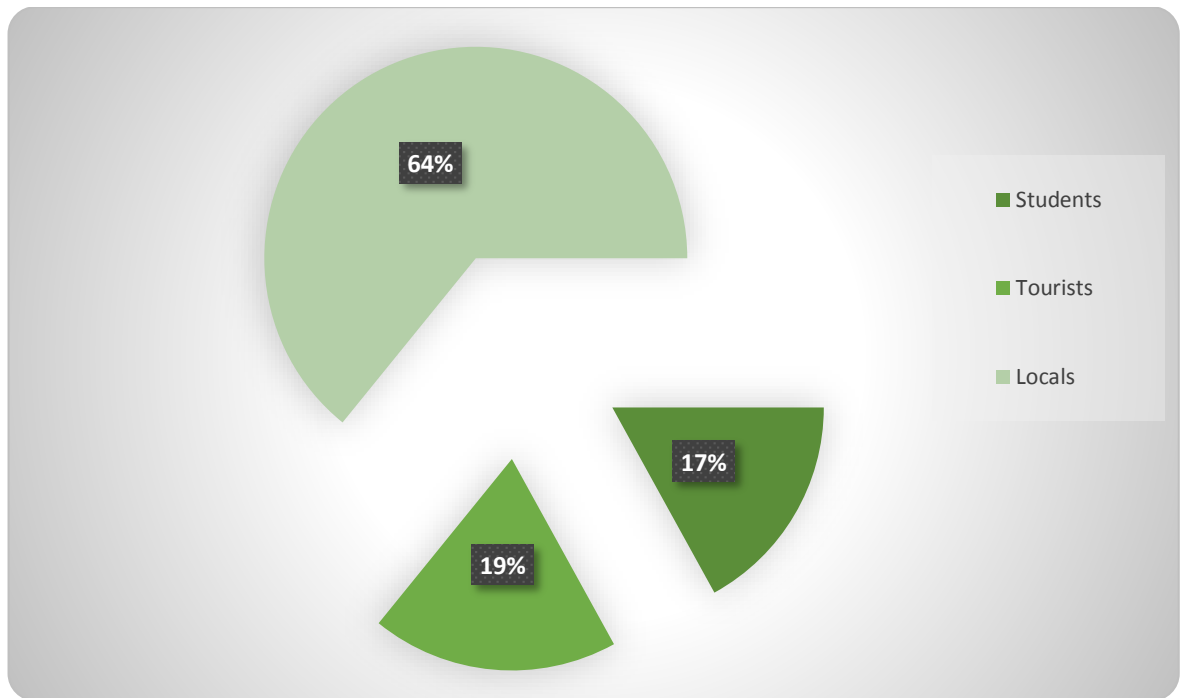


Figure 2. Customer segments

From every customer waiters tried to get answers for the following questions:

1. How do you like the cocktail?
2. Do you want to try this kind of cocktail again?
3. Do you think these cocktails would be popular in Finland?
4. Is the price reasonable? Would you pay more?

For the first question, only three people answered that cocktails did not satisfy their taste. But the reason was that they did not read the cocktail list, followed the waitress' advice and ordered Frog's lake, where they did not expect to see vanilla ice cream as a ball, as they wanted cocktail in liquid form. One customer described the feelings as quite neutral. Five customers did not give any an-

swers for the reason that waiter was too busy to discuss with them and the rest of customers said that they are amazed and satisfied with their experience.

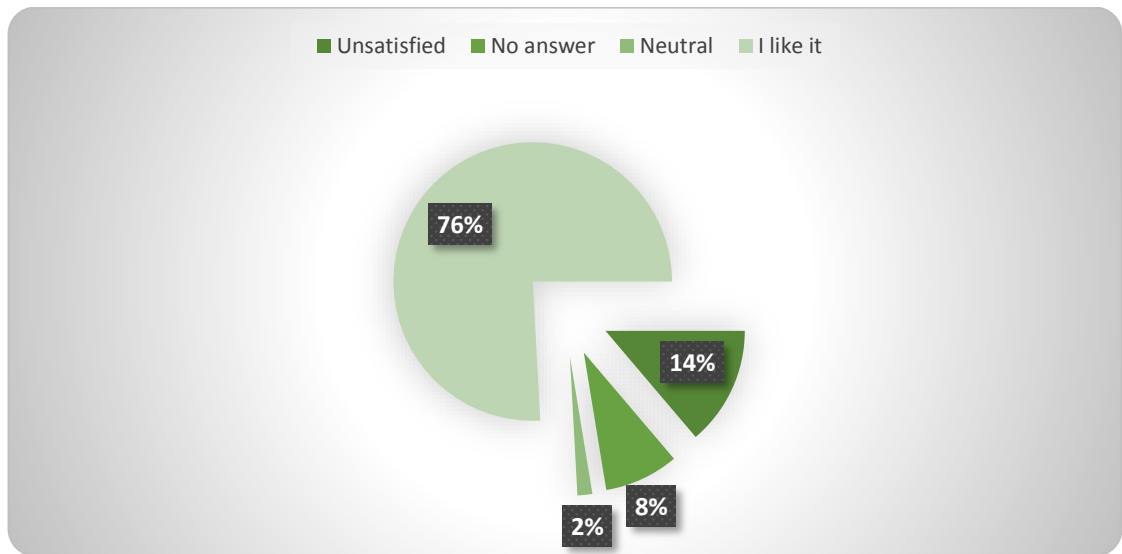


Figure 3. How do you like the cocktail?

Forty respondents would try these cocktails again even in the same restaurant; one said that bar culture has to stay conservative: so cocktail should remain a cocktail. The rest of the customers did not have an answer for the question, because their answers depended on the time and place where molecular cocktails would be served next time or for some other reasons.

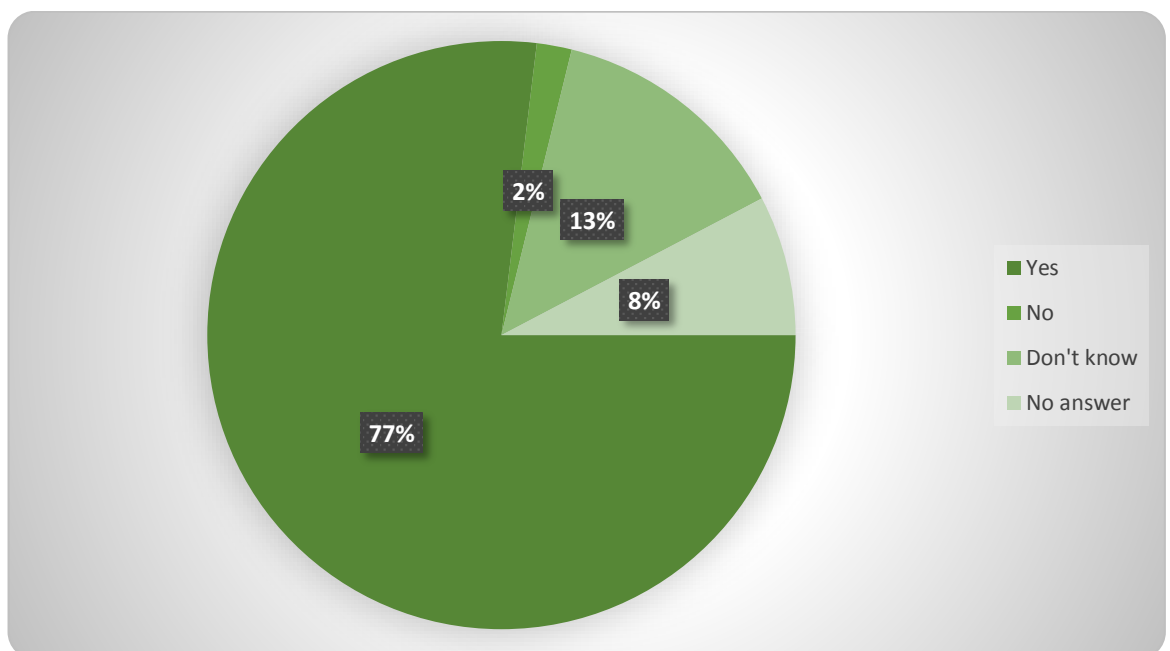


Figure 4. Do you want to try this kind of cocktail again?

Next question was more complicated for the customers, because they had to answer for the whole nation. Answers were quite similar: forty-six persons assumed that molecular mixology would be popular in Helsinki, Tampere, Turku and one suggested that Finland is not the right country for the innovation. Six customers did not give any answer.

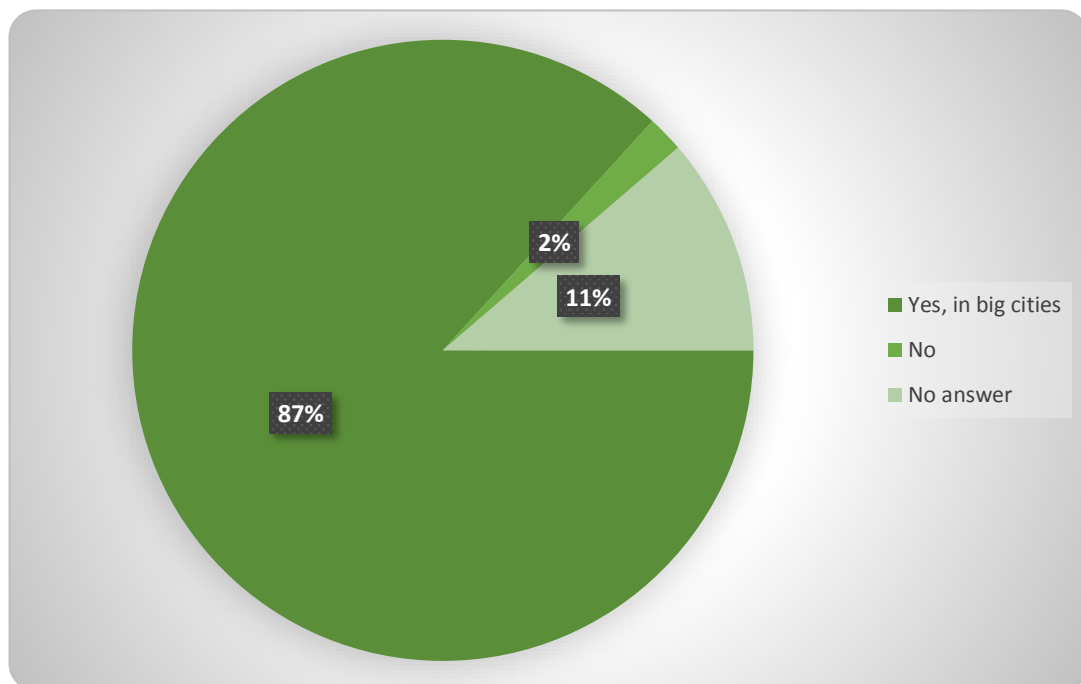


Figure 5. Do you think these cocktails would be popular in Finland?

Pricing is usually a delicate question, as customer and company are fighting to save money or to get more respectively. Nine ninety is the lowest price which usual restaurant without everyday serving of molecular gastronomy can provide. Therefore, it was important to understand what amount of money people are ready to pay for the innovative cocktails. Surprisingly, twenty-six people said that price is reasonable and they would pay even more for such an interesting experience. Three persons suggested that price has to stay the same on the level of nine or ten euros. Seven customers said that price is too high for their budget. The rest of the people did not give any answer for some reason. (Figure 6.)

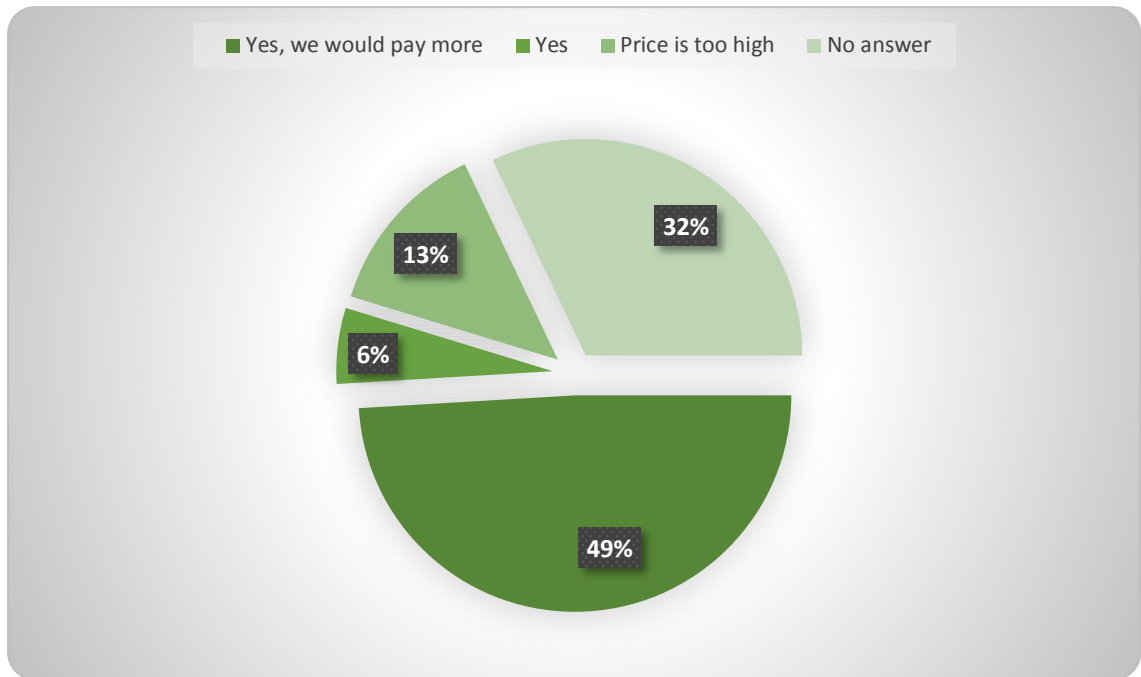


Figure 6. Is the price reasonable? Would you pay more?

7 Results of the project

As a result of customers' survey author got information that people from Imatra seem to be interested in the new trend of bartending. They are ready to pay for the new experience and new feelings. However, as in every small town middle class is quite small here, that is why it would be wise, as many customers mentioned, to organize the project in a bigger city, as Helsinki or Tampere to analyse Finnish view of the molecular mixology. But even in Imatra region, with lower salaries than in the capital, nine euros and ninety cents seemed to be a reasonable price, which people are ready to pay.

In Table 2, the author shows that after the project Bar&Bistro got four hundred thirteen euros and seventy-two cents as a sales margin. As it was volunteer work for the author, the restaurant did not have to pay for the labour costs and did not have to pay any extra costs as electricity or water, because the project was organized during normal working hours of the restaurant. So, the project brought extra money for the house and extra customers, who came to taste the cocktails, but made extra sales by buying other drinks and food. As managers of Bar&Bistro mentioned, during Molecular Days sales of food increased by fif-

teen percent compared to the previous week and were higher than during the same dates last year by twenty-two percent.

Number of customers	Sales (price 9.90)	Costs of cocktails (average 2.094 euro)	Sales margin
53	524.70	110.98	413.72

Table 2. Calculations of sales margin

So, the result of the project is the answer to the question mentioned in introduction chapter “Would molecular mixology be popular in Finland?”. Moreover, the answer is yes, it would be! However, the popularity depends on the location of the serving restaurant or bar, its target audience, and pricing policy. Alcohol drinks play a major role in dining culture of Finnish people, and they seem to be open for all innovations and trends if we base on the answers given by the customers in Imatra.

8 Conclusions and suggestions

The thesis presented was created in order to analyse the future of molecular mixology in Finland and to answer the main question: Would molecular mixology be popular in Finland? The author got an answer for the question, analysed all aspects of alcohol law and regulations in Finland concerning cocktail serving and promotion and increased her knowledge about molecular gastronomy and mixology. The goals set were reached from the project observations and the questions asked from the customers: people who tried molecular cocktail for the first time were really delighted and wanted to try other creations of molecular art.

To sum up, the planning and organizing the project was almost entirely done by the author; she did a great job, but the results are also quite impressive. The author brought more than four hundred euros for the company Bar&Bistro and did not spend any money on the marketing. Even though she paid for chemicals by herself, it does not change the picture of a project – chemicals add only one

or two euros extra cost for every drink during the project. In the restaurant there was a really warm and positive atmosphere, where people were sharing their cocktails and discussing the taste and the structure. In the author's opinion, happy customers are even more important for the business than just profit, it gives motivation for development and to move further. And for every project the most important point is passion and willingness to develop.

Additionally, the project helped to analyse if there is a future for the author's career in the bartending as a future specialist in molecular mixology and to inspire the managers of Bar&Bistro to set up the same style projects in the future. But already now perspectives seem to be really rainbow coloured, since the author got a superb offer about cooperation with a really famous bartender, winner of many Finnish competitions among bartenders, Markus Sillanpää. Together they are thinking to develop their bartending skills jointly to introduce molecular mixology in one of the bar competitions next year. At the same time, Bar&Bistro is interested in using the author's skills in the future for special occasions as weddings, cocktail parties, and so on.

The thesis could be used as a proper instruction for restaurants, which are thinking to organize a project connected with molecular cocktails. Only one thing the author does not want to share with readers, it is the set of recipes which were used during the project, because the author was changing the Internet versions by herself to get the best possible result, by using her knowledge of chemistry. The author faced one big problem during her research: lack of reliable information sources, since there are not so many books written about molecular mixology yet. Those books, which would be probably useful for the author, are printed in France, but the author, unfortunately, does not speak French. It was a big challenge for the author to filter all information from the Internet to get only useful and trustworthy sources.

The author suggests that results of the project would be more evident and apparent, if the project was done in bigger city such as Helsinki or Tampere, and probably the next step in the author's career is an event organized in one of the bars or restaurants in Helsinki.

All in all, the thesis would be more completed if the author had possibility to visit a restaurant in Estonia, “Art Priori”, where she had an agreement to get a free master class of molecular cocktails from its chefs and to get an interview about their own experience in molecular mixology. But unfortunately, because of problems with a residence permit, the idea stayed on the stage of the plan. The project would probably have more professional character if the author had got possibility to see all processes in real life before the event, not only on the YouTube videos. The author’s approach is that before organizing such a complicated project, it would be wise to have a professional supervisor in this unusual field of restaurant studies.

Altogether, even though some mistakes were made during the project organization, such as late start of the promotion, the overall result of the work is very positive. Improvisation skills helped the author to solve all problems and, on the whole, customer feedbacks were better than expected.

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List of references

Aho, K., Autti, N. & Siitonen, T. 2009. Mikosta mestariksi: Baarityön käsikirja. Vantaa: Hansaprint Direct Oy.

Alho, O. 2002. A guide to Finnish customs and manners. Updated 2010. ThisIsFinland. <https://finland.fi/life-society/a-guide-to-finnish-customs-and-manners/>. Accessed on 2nd January 2017.

Borodina, O. n.d. History of molecular mixology. Kedem. <http://kedem.ru/schoolcook/basis/20090316-molcookery/>. Accessed on 1st October 2016.

Brunning, A. 2016. Science Hits the Bar – The Chemistry of Cocktail. <http://www.compoundchem.com>. Accessed on 8th March 2017.

Business Dictionary. 2017. Word-of-mouth. <http://www.businessdictionary.com/definition/word-of-mouth-marketing.html>. Accessed on 8th March 2017.

Evira. 2016a. Agar. <https://www.evira.fi/elintarvikkeet/tietoa-elintarvikkeista/koostumus/elintarvikeparanteet/lisaaaineet/e-koodit/e406/>. Accessed on 25th September 2016.

Evira. 2016b. Calcium Lactate. <https://www.evira.fi/elintarvikkeet/tietoa-elintarvikkeista/koostumus/elintarvikeparanteet/lisaaaineet/e-koodit/e3272/>. Accessed on 25th September 2016.

Evira. 2016c. Sodium alginate. <https://www.evira.fi/elintarvikkeet/tietoa-elintarvikkeista/koostumus/elintarvikeparanteet/lisaaaineet/e-koodit/e401/>. Accessed on 25th September 2016.

Evira. 2016d. Soy Lecithin. <https://www.evira.fi/elintarvikkeet/tietoa-elintarvikkeista/koostumus/elintarvikeparanteet/lisaaaineet/e-koodit/e3222/>. Accessed on 25th September 2016.

Giramuk, D. 2015. White Chocolate and Coconut Panna cotta with Hibiscus Syrup Pearls. The Flavor Blender. <https://www.theflavorbender.com/white-chocolate-coconut-panna-cotta-with-hibiscus-syrup-pearls/>. Accessed on 12th March 2017.

Graham, C. 2016. Molecular Mixology. About.com. http://cocktails.about.com/od/mixology/g/molecular_mix.htm. Accessed on 25th September 2016.

Hyppänen, M. 2016. Interview with shift manager of Bar&Bistro, conducted on 3rd of September 2016.

Ivanova, E. n.d. Molecular Cocktails history. De Kuyper cocktails. Dnepropetrovsk: Arda.

Klyos. 2011. Basic introduction into molecular mixology. <http://klyos.livejournal.com/4391.html>. Accessed on 7th March 2017.

Kondratenko, F. 2009. Molecular Mixology. Horeca Magazine. <http://www.horeca-magazine.ru/article/84/> Accessed on 28th October 2016.

Lahdenkupi, M. & Rinta-Huumo, A. 2004. Juomavalintoja ravintolassa: s'il vous plait. First edition. Porvoo: WS Bookwell Oy.

Larson, E.W. & Gray, C.F. 2011. Project Management: The Managerial Process. Fifth edition. New York: McGraw-Hill Companies.

Logsdon, J. n.d. Gelification. Amazing food: Made Easy. <http://www.amazingfoodmadeeasy.com/define/molecular-gastronomy-glossary/what-is/gelification>. Accessed on 25th January 2017.

Lowe, M. 2007. Beginning research. A guide for foundation degree students. First edition. New York: Routledge.

Modabar. 2016. Molecular Mixology. <http://modabar.org/news/page/137>. Accessed on 28th October 2016.

Molecule-R. 2016a. Emulsification.

<http://moleculargastronomy.com/recipes/emulsification/>. Accessed on 25th September 2016.

Molecule-R. 2016b. Gelification.

<http://moleculargastronomy.com/recipes/gelification/>. Accessed on 25th September 2016.

Molecule-R. 2016c. Spherification.

<http://moleculargastronomy.com/recipes/spherification/>. Accessed on 25th September 2016.

Montonen, M. 2015. Alcohol legislation. Public Health. European Commission.

http://ec.europa.eu/health//sites/health/files/alcohol/docs/ev_20150922_co03_en.pdf. Accessed on 25th January 2017.

Pyhtina, E. 2011. Molecular mixology as a future of Hospitality industry. Kursk:

Kursk State University. <http://www.scienceforum.ru/2017/pdf/35281.pdf> Accessed on 6th November 2016.

Saint Pellegrino. World's 50 Best Restaurants top 2016.

<http://www.theworlds50best.com/>. Accessed on 25th September 2016.

Sodasifon. 2016. History of molecular mixology. Sodasifon.ru.

<http://www.sodasifon.ru/poleznyie-stati/interesnaya-kulinariya/istoriya-molekulyarnoj-kuxni.html>. Accessed on 2nd November 2016.

Suleimanov, A. 2014. Future of molecular mixology. <http://www.aktau-business.com/2014/06/11/molekulyarnaya-miksologiya-eto-kokteyl'naya-revolyuciya.html>.

Accessed on 6th November 2016.

Technopedia: Technology Terms. 2016. Social Media Marketing.

<https://www.technopedia.com/definition/5396/social-media-marketing-smm>.

Accessed on 8th March 2017.

Valvira. 2015. Alcohol advertisement. Valvira.fi.

<http://www.valvira.fi/web/en/alcohol/advertising>. Accessed on 2nd November 2016.

Valvira. 2016a. Alcohol Issues in Licensed Premises.

https://www.valvira.fi/documents/18508/169485/Alcohol_Issues_in_Licensed_Premises.pdf. Accessed on 2nd November 2016.

Valvira. 2016b. Alkoholiasiat ravintolassa.

https://www.valvira.fi/documents/14444/22511/Alkoholiasiat_ravintolassa.pdf. Accessed on 31st December 2016.

YLE. News for English speaking. 2015. Finland sobering up as alcohol consumption declines. Yle.fi.

http://yle.fi/uutiset/osasto/news/finland_sobering_up_as_alcohol_consumption_declines/7998326. Accessed on 25th September 2016.

Appendices

Appendix 1. Cocktail list (Finnish version)



1. Magic Tequila

Tequilaa, limemehua

2. Fried egg (saa myös alkoholittomana)

Jogurttilikööriä, mango pyreettä,

3. Heinäsirkka (saa myös alkoholittomana)

Minttulikööriä, kahvilikööriä, kermaa

4. Frog's lake

Minttulikööriä, vaniljajäätelöä, paukku sokeria

5. Magic caviar

Karpalomehua, Mansikkalikööriä, Triple Sec-iä

Appendix 2. Cocktail list (English version)

9.90 €



Molecular cocktails

1. Magic Tequila

Tequila, lime juice

2. Fried egg (alcohol free version available)

Mango puree, yoghurt

3. Grasshopper (alcohol free version available)

Menthe liqueur , coffee liqueur , cream

4. Frog's lake

Menthe liqueur, vanilla ice cream, popping sugar

5. Magic caviar

Cranberry juice, Strawberry liquor, Triple Sec

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