



American University of Armenia

Հայաստանի Ամերիկյան Համալսարան

A US-accredited institution affiliated with the University of California.

“New Market Niche for JurJur” Capstone Project

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Introduction

Established in 2008 as a product extension of “Byuregh” and registered as “Every Day” CJSC, in 2012 as a result of competition new brand “JurJur” was created. Hereinafter JurJur is providing water filtration services, particularly water filtration with dispenser, various food and non-food delivery, as well as produces bottled water. Being a middle sized company with around fifty employees, it has a notable part of market share, though currently the competition is becoming more and more severe.

The current problem of JurJur is the slowing sales growth compared to the initial expectations, which is why JurJur is seeking new opportunities for diversified and sustainable sources of revenue in the water filtration market, as they have expertise in the field of water filtration system installation. Particularly, water delivery market is not growing in Yerevan, and in Armenia overall. In 2015 physical volume of consumption decreased by 2% compared to 2014.

If the company manages to offer the highest quality products for household water filtration in line with the best service to meet customer demands, it will have a real opportunity to become the first mover in this newly emerging market of household water filtration systems. So transferring the current market threats into opportunities for acquiring new market share will have twofold benefit both for the company and customers as well.

The most important issue that this paper aims to address is the assessment of the potential market and estimation of the company’s capabilities in terms of corresponding supply. There are many factors that influence on the decision of buying certain type of water filtration systems, which should be assessed in the scope of this paper. Moreover, given the fair quality of urban water systems, the company should be successful enough to offer comprehensive service package which will become simple solution for the households in water quality improvement.

Water filtration market in Armenia

The research started with the current market assessment of water filtration systems in Armenia. The investigation revealed that there is well-defined supply for industrial and large-scale filtration systems. Though there are a number of suppliers in Armenian market, only a few of them offer household filtration systems in addition to their product range. Moreover, there is no proper marketing and communication with customers. Only the equipment is traded, and the customer should undertake both the equipment purchasing and after sale servicing individually. No full service package is available in the market.

Taking into account both the pricing and availability factors, the research group split the Armenian water filtration market into 3 segments: mass market, mid- market and premium

market. Also filtration capacity is taken into account, as it can be a directing factor for buyers.

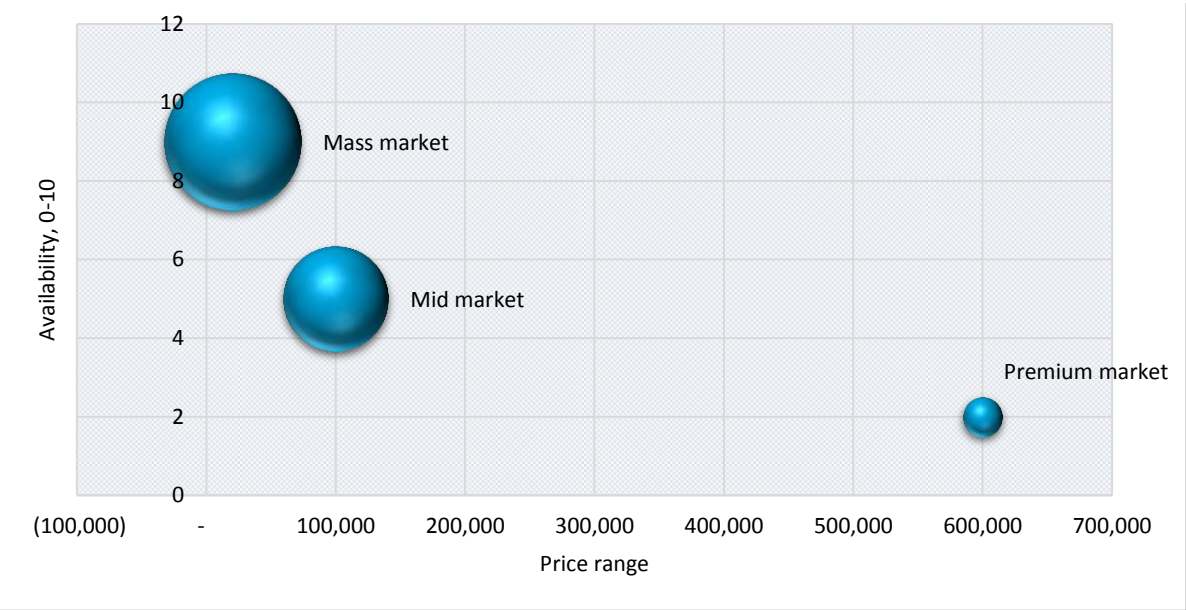
1. **Mass market.** This includes products with the price range of AMD 3000-30,000 and with highest availability in the market. Here we see various types of small mechanical filtration devices, which include mainly Pitcher filters, Faucet water filters and water softener systems. This types of products are very easy to use and install, do not need special servicing, also the final result does not provide high quality filtration and are of lower capacity (can filter fewer gallons). Distributing companies are Gipfel (“Aquaphor Filters”) and various suppliers in “Gnuni” Trade Center.
2. **Mid-market.** This segment includes filters priced in the range of AMD 30,000-150,000 and products both with wide availability and several models with limited representation (quantities).
Compared to the previous segment here we have higher quality and more professional solutions, which mainly require regular servicing and installation. Products are membrane filters, reverse-osmosis systems, 3-stage UTC filtration. These models require substitution in 6-12 month with additional costs of AMD 15,000 on average. Also installation fees starting from AMD 5000 are charged by almost all distributors. Filters dispense the water through a separate faucet, which almost all sellers include in the product packaging.
Here we have models which are able to remove most contaminants from the water and in the same time maintain the benefits of healthy minerals. Filtration capacity is increased up to 50-100 liters daily.
Specified distributors of this segment are Zvezda Security Systems, Gipfel, which offer filtration systems from Russia, Italy, and Belgium.
3. **Premium market:** Very few distributors are seen in this segment which charge prices of AMD 200,000-700,000 and import best known models from international market. Product types are reverse-osmosis with 3-5 stage filtration, Filtration systems with UV solution. Filtration capacity is highest here: up to 500 liters on a daily bases. Armenian distributors Aqua Standard LLC and Nosorog Corporation import from Italian and USA producers.

For the identified market segments the group has created bubble chart which visualizes the availability of the market for each segment and the product price range in the corresponding segment. The size of the bubble is the market size of each segment.

From the overall research, the group revealed that there is little distinguished and well-defined supply directed to the household filtration, particularly, under-the-counter filtration market. Water filtration retailers are mainly concentrated towards industrial and large-scale filtration. Although there are products for UTC filtration, companies are not

directed to offer specialized services for household filtration. Customers, who need such filters, should search by themselves, and in most cases, there is the principle of self-servicing. “Nosorog” Company offers the only specialized offer for UTC water filtration with the brand PurePro, the price of which is not affordable by the average customer (700,000 AMD).

Figure 1: Household water filtration market segments relative positioning



Current developments in Armenia

The water filtration market is entering into a stage, where servicing of the water filtration products will be of greater importance than just selling the product. Currently according to the group’s online survey results (*see exhibit 4*) most of the customers are not aware of such opportunities in the household water filtration, but there can surely be a demand for not only the product, but after-sales service as well. In case proper product is offered with proper servicing, the new market will become the early majority users.

Categorizing into growth groups, it can be concluded that 3-stage UTC filters and reverse osmosis UTC filters, which are in the price range from 50,000 to 150,000 AMD, will have the fastest growth. Although there is little sales effort for these products and awareness of customers, they are easy to use and will fit well to the demand of people, who want to use cleaner water not only for drinking, but for food as well. Of course, the growth will be fast, if necessary sales efforts and required services are provided to the customers (installation, filters changing reminders, etc.).

Moderate growth will have simple mechanical filters and pitcher filters. The latter has too small productivity and is useful only for drinking water. PurePro provided by Nosorog is

going to have slow growth or will be eliminated from the market. The company is not providing services actively for now, and the pricing of the service is doubtful.

New opportunities for JurJur

With the help of its customer base and professionalism in water filtration, JurJur can be successful in offering their customers one of the possible alternatives. After thorough analysis of the available household water filtration system alternatives in Armenian markets, the group has come up with two feasible options: Reverse Osmosis and 3-stage UTC water filters (*see exhibit 2*). Both have strong and weak sides, which will be presented below.

Reverse Osmosis is a water filtration system installed under the counter, using membrane and 3-5 stage filtration, the purified water is accumulated in the tank (up to 10 liters capacity). The system typically includes a sediment filter to trap particles, including rust and calcium carbonate, an activated carbon filter to trap organic chemicals and chlorine and a reverse osmosis filter, which is a thin film composite membrane and other optional parts which contribute to the overall filtration quality. This system Improves taste, odor and appearance, is easy to install, is highly effective in purification process (removes impurities and particles larger than .001 microns¹) and consumes no energy. On the other hand in terms of productivity it is not so efficient (in most cases 5-7 liters per hour) and has low level of economy (produces 1 liters of clean water per 4-6 liters of tap water: water waste is high) (*see exhibit 3*).

3-stage UTC water filters are installed under the counter and connected directly to the water pipe. This system includes the following filters:

- A sediment filter,
- An activated carbon filter,
- Mechanical filter,
- Ultraviolet lamp filter (optional).

This system is easy to install and change the filters, takes relatively little space under the counter, is more affordable and consumes no energy as well. Compared to the Reverse Osmosis filtration system 3-stage UTC has higher productivity (on average 2-3 liters per minute) and smaller amount of water waste. On the other hand with 3-stage UTC water is not absolutely purified, and in some cases if the water is too hard, the taste of it after filtration will be slightly salty.

¹ These particles include sodium, sulfate, calcium, potassium, nitrate, iron, zinc, mercury, selenium, phosphate, lead, arsenic, magnesium, nickel, fluoride, manganese, cadmium, barium, cyanide, chloride. R.O. system will remove on average 80-98% of these elements in the water.

International suppliers

After examining the international UTC filtration market 3 best alternatives were identified, which are available and affordable for the average Armenian user.

The premium PurePro brand led to the US market where a Texas based firm Aquasana was identified which manufactures filters and offers under the counter solutions for domestic water usage. After price negotiations they promised to sell both reverse osmosis and 3 stage carbon filters at prices shown in the *table 1* in case we buy over 100 items. However, the long distance from Armenia, freight issues and some negative feedback by the customers on the company's website made the situation ambiguous so we would recommend considering this option as the last alternative.

Second finding refers to the UAE market. There we have found a manufacturer specialized in water purification called UTC (Universal Technologies Company) which also offers reverse osmosis filters for affordable price (600 AED). Price and other characteristics are illustrated in the table in comparison with the other alternatives. However, though this company manufactures domestic filtration systems its main concentration is the industrial water purification.

The third alternative in Russian market is probably the most available and affordable. A Moscow based company Raifil manufactures and distributes domestic filtration equipment throughout the whole Russian Federation. It is worth mentioning that the Armenian user is partially familiar with this brand since the first time we noticed it was in the Gnuni market. Afterwards we got in touch with the company headquarters in Moscow and they offered lower price than in the local market. Another advantage is our membership in the Eurasian Custom Union due to which freight issues are becoming easier.

Table 1: International suppliers listing

Brand	Country	Type	Price USD
Aquasana	USA	3 stage UTC	\$95
		R.O. UTC	\$190
UTCompany	UAE	3 stage UTC	N/A
		R.O. UTC	\$163
Raifil	RF	5 stage UF	\$93
		R.O. UTC	\$160

Switching costs in the market

When addressing the switching costs for each segment the group has come up with a notion that it is far easier to switch from mass market to the middle one than from the middle market to the premium. Here are several arguments in this regard.

1. There is not very large price distortion between the mass and middle segments. That is to say a family which pays AMD 18000 for buying a pitcher filter and AMD 3,500 for cartridge substitution, it would not make a very large difference to pay say AMD 60,000 for 3-stage UTC filter and have a pure water with excessive accessibility. When considering switching from mid to premium segment on the other hand, it would be very difficult for an average mid segment customer to afford AMD 600,000 for a relatively pure water.
2. However, the water quality difference between mass and medium segments is quite tangible as compared to it between medium and premium segments. So it would make sense to pay additional AMD 50,000 for excessively higher quality water rather than additional AMD 400,000 for a relatively higher quality.
3. Furthermore, it is worth to mention that in terms of accessibility there is not so much difference between mid-segment UTC filters and premium segment ones. That is to say generally you feel not much difference after switching to premium segment since you get almost the same water from the same faucet. However, one is going to feel very comfortable with pure water from the faucet instead of former pitcher. Now no more efforts are needed to fill the pitcher constantly.

On the other hand there are also some limitations that JurJur should consider before entering the market.

Firstly, as JurJur inclines to offer filtration services for household usage to its current customers in Yerevan, it is important to take into account that water quality in most of the Yerevan Districts have enough quality even for drinking, and that would be costly to communicate to customers the need of incorporating water filtration systems for everyday household usage.

Secondly, the switching cost of the customers from one segment to another is not much dependent on the market differentiation rather than the ease of usage, installation and after-sale services, meaning that for the pitcher filter user it would completely uncomfortable to use UTC filter systems. But on the other hand, switching from mid-market to premium would be easy as they have similar physical structure, and would not require installation difficulties and place availability.

So, summing up the above-mentioned reasons it would make quite a real sense to switch from mass to medium market segment, which is a great opportunity for JurJur to consider.

Estimated Demand for the new service

To understand the need for household filtration services and have access to customer demand, it is vital to have an understanding about the factors shaping the demand. For this purpose a survey was conducted encompassing both JurJur's current customer base and other households not using water services currently.

The aim of survey was to identify the price by which customers are ready and willing to acquire water filtration systems, as well as other non-price factors that affect the demand. As a result, the identified factors affecting the demand side for water filtration systems are:

- Price,
- Average monthly income of the household,
- Stages of water filtration,
- Occupied space of the equipment,
- Country of origin (this is associated with the degree of the product quality)
- After-sales services access and availability

Based on the price factor, a simple linear demand curve was derived (*see exhibit 5*). From overall 211 respondents, price ranges of “up to 30,000 AMD”, “30,000-100,000 AMD” and “100,001 and more” were identified each having a number of people ready to pay for it.

Most of the respondents are ready to pay up to 30,000 AMD for the water filtration systems (84.2%). Price elasticity of the demand along the curve is different.

Other non-price factors affecting demand were also identified. One important factor is average monthly income of the household, which directly affects the price customers are ready to pay. Another factor affecting customers' decision of choosing water filtration system is the stages of water filtration. As the survey results show, 30.3% of respondent value it as one of three important factors when making decision. After-sales service is the third important factor, after price and filtration stages, for customers in choosing the water filtration system. Country of origin and occupied space of the systems in the house continue the ranking by importance, as there still is an association of quality with country of origin. As regard the occupied space, it is important to mention that the decision of choosing the water filtration systems is made in the stage when the furniture of the kitchen is in the order stage, and can be ordered accordingly to fit the filtration systems as well. Detailed results of survey can be found in appendix.

There is an increasing awareness of water quality among households, although survey revealed that 15% of the respondents were not aware of possible affordable solutions for water purification.

Service definition and current market gaps

The local market for water filtration products and services was observed and some products, providers and distributors were identified. Although in Armenia there is mature

market for water filtration products, but they are mainly concentrated on industrial filter systems. At the same time Under The Counter household market is just starting to emerge. Only one company was identified (PurePro) that was doing proper customer communication and marketing for its products, though it went to passive phase, meaning that once there is customer, the filter will be ordered and delivered. Other filter providers were only offering the product (no after sale services like filter substitution or customer relationship management) and again in case customer approaches them.

It is better to offer UTC household water filtration systems with proper after sale service and customer relationship management. The main target of JurJur should be its current customers. Important to mention, that this new offer is not going to be a substitute for company's current products (e.g. dispensers for hot and cold water), but rather product differentiation, thus eliminating product cannibalization for JurJur.

The service package should include 3-stage UTC water filtration system from Russian supplier "Raifil" and related services comprising of:

- Free installation of the equipment.
- After-sales services including filter substitution and system maintenance.

The package requires strong customer relationship management, which JurJur already has. After sales service of water filtration system has been identified to be the third most important factor when choosing the product.

Cost structure for 3-stage filtration system equipment and installation.

The main ingredients cost structure are upfront costs, costs for equipment, costs for current maintenance and overhead costs. The biggest part of the upfront cost is customer acquisition cost which is about AMD 15,000 for the initial customers based on the groups approximations, insight from the international benchmark and company management staff. However, this amount is a subject for decrease during time, as more and more customers are engaged. The rest of upfront cost is equipment installation cost which is about AMD 5,000 according to the past experience of the company and the current market value of such services.

After examining all the available alternatives of international suppliers, the group identified that 3-stage filter equipment would cost AMD 23,000 including transportation to Armenia. Maintenance for this particular equipment refers to filter changing which is AMD 7,500 per time. Filters equipments are changed on average 1.7 times per year. Consequently for a life time of 3 years total cost is AMD 38,250 per one filtration system can be incurred ($7,500 \times 1.7 \times 38,250$).

Summing up all the above mentioned costs and adding the overhead and taxes component of 30 % derived from tax rates and the current performance of the company we will get the following:

Total costs = (15,000 + 5,000 + 23,000 + 38,250) x 1.3 = 105,625 AMD over the lifetime

Business model for revenue generation

The new product and service offering can be based on the following two models for generating revenue:

1. “Monthly rental” model,
2. “Upfront payment” model.

In case of monthly rental payment, customers should pay a fixed monthly fee of 3750 AMD, which will include equipment price and filters changing price. For a 3-year lifetime value, total revenue will be 135,000 AMD. In the second case, customers should pay upfront 30,000 AMD for the equipment, and each year pay a filters substitution fee of 25,500 AMD (15,000 AMD for 3 filters for the substitution rate of 1.7 times per year). For three years total revenue will be 106,500 AMD.

Table 2: Summarized costs and revenues for two business models

<i>AMD, per one installation</i>	Monthly rental	Upfront payment
<i>Revenue</i>	135,000	106,500
<i>Total costs</i>	105,625	105,625
<i>Profit</i>	29,375	875
<i>Profit margin</i>	22%	0.8%

It is obvious that “Monthly rental” model is more favorable for JurJur for the following reasons:

- The price is psychologically acceptable for the customers. It is affordable and meets customers’ expectations regarding the price.
- For the “Upfront payment” model, the upfront payment cannot be increased, as customers are not ready to pay more than 30,000 AMD (according to the survey results).
- It is much more profitable, than the other alternative as seen from the profit margin figures.

Overall, entering the new market with the right business model can be quite profitable for the company, and affordable for the customers.

Conclusions and Recommendations

Based on the above research and findings the group recommends JurJur to enter UTC water filtration market with 3-stage UTC water filter system, as this option is more affordable and will match customers’ expectations. Additionally, as water quality in Yerevan is quite high,

with this simple solution water quality will be improved both for drinking and cooking. Costs associated with the product are relatively low, and current expertise of the company in water filtration systems is sufficient for providing a new service.

Water delivery market is not growing at the expected rates, entering into its maturity stage. Being a middle sized company in the water delivery market JurJur is trying to address current market threats by looking for new diversified sources of revenue. Evaluating its resource capability one of the most feasible options is the newly emerging market of household water filtration systems in Armenia. The business processes in the company and existent expertise are making it possible to provide continuous water filtration services to its customers. Additionally, there is an increasing awareness of water quality among households and most of them are not aware of possible affordable solutions for water purification, which is an opportunity that JurJur should not miss. If the company manages to enter the market with correctly designed comprehensive service package, which will at least meet if not exceed customers' expectations, then the success will come soon after.

Exhibit 1: Products of Armenian water filtration market

Brand name	Price	Origin	Availability/servicing
Various (mechanical filter)	3000-7000 AMD	Russia, China	<ul style="list-style-type: none"> ▪ Widely available ▪ Self-servicing
Aquaphor (Pitcher filters)	8,000-18,000 AMD	Russia, “Aquaphor Filters”	<ul style="list-style-type: none"> ▪ Widely available ▪ Substitution rate²-300 liters ▪ Filter cartridge price- 3500 AMD
Aquaphor Crystal Eco (3-stage UTC filter)	53,000 AMD	Russia, “Aquaphor Filters”	<ul style="list-style-type: none"> ▪ Widely available (distributor – Gipfel) ▪ Installation fee- 5000-6000 AMD ▪ Filter substitution rate- 6-12 months ▪ Filter cartridge price- up to 28,000 AMD ▪ Faucet cost included in the price
Geyser (3-stage UTC filter)	68,000 AMD	Russia, “Geyser Company”	<ul style="list-style-type: none"> ▪ Widely available (distributor – Zvezda Security Systems) ▪ Installation fee-15,000 AMD, filter substitution rate-6-12 months, faucet cost included in the price
Atlas (3-stage UTC filter)	74,000 AMD	Italy, “Atlas Filtri”	<ul style="list-style-type: none"> ▪ Widely available (distributor-Aqua Standard LLC) ▪ Filter substitution rate – 12 months ▪ Filters price - 12,000 AMD ▪ Faucet cost included in the price
Geyser (membrane filter)	97,000 AMD	Russia, “Geyser Company”	<ul style="list-style-type: none"> ▪ Widely available (distributor – Zvezda Security Systems) ▪ Specialist installation- 15,000 AMD ▪ Installation price – up to 15,000 AMD ▪ Faucet cost included in the price,
Aquaphor Osmo (reverse-osmosis filter)	100,000 AMD	Russia, “Aquaphor Filters”	<ul style="list-style-type: none"> ▪ Rarely available (distributor – Gipfel) ▪ Filter substitution rate- once per 6-12 months ▪ Filters price – up to 28,000 AMD ▪ Installation fee – 5000-6000 AMD ▪ Faucet cost included in the price

² Substitution rate – useful life of filters in volume (months), after which filters need to be reinstalled

RAIFIL (reverse osmosis filter)	100,000 AMD	Russia, "RAIFIL Company"	<ul style="list-style-type: none"> ▪ Widely available (no specified distributor) ▪ Filter substitution rate – 6-12 months ▪ Filters price – up to 10,000 AMD ▪ Faucet cost included in the price
Euraqua (reverse-osmosis filters, 5 stages)	145,000 AMD	Belgium, "Euraqua Pollet water Group"	<ul style="list-style-type: none"> ▪ Rarely available (distributor – Aqua Standard LLC) ▪ Filter substitution rate- once per 6 months ▪ Filters- 6000-9000 AMD ▪ Membrane substitution – once per 1-2 years ▪ Membrane price-30,000 AMD ▪ Faucet cost included in the price
Geyser (Reverse-osmosis filter)	159,000 AMD	Russia, Geyser Company	<ul style="list-style-type: none"> ▪ Rarely available (distributor- Zvezda Security Systems) ▪ Specialist installation – 15,000 AMD ▪ Filters substitution rate – 6-12 months ▪ Faucet cost included in the price
Atlas (UV, 3-stage filtration)	600,000 AMD	Italy, Atlas Filtri	<ul style="list-style-type: none"> ▪ Specialist (distributor – Aqua Standard LLC) ▪ Filter substitution rate – 12 months ▪ Filters price - 10,000-12,000 AMD ▪ UV lamp substitution rate - once per 3 years ▪ UV Lamp price - 60,000 AMD ▪ Faucet cost included in the price
PurePro (reverse osmosis filtration)	700,000 AMD	USA	<ul style="list-style-type: none"> ▪ Specialist (distributor- Nosorog Corporation) ▪ Specialist installation service included in the price

Exhibit 2: Reverse Osmosis and 3-Stage UTC water filtration equipment



Reverse Osmosis water filtration system



3-Stage UTC water filtration system



Exhibit 3: Comparison of Reverse Osmosis and 3-stage UTC filters

Comparison of Reverse Osmosis and 3-stage UTC filters

	Reverse Osmosis	3-stage UTC water filters
Description	<p>Water filtration system installed under the counter, using membrane and 3-5 stage filtration, the purified water is accumulated in the tank (up to 10 liters capacity). The system typically includes the following steps:</p> <ul style="list-style-type: none"> • a sediment filter to trap particles, including rust and calcium carbonate • optionally, a second sediment filter with smaller pores • an activated carbon filter to trap organic chemicals and chlorine • a reverse osmosis filter, which is a thin film composite membrane • optionally, a second carbon filter to capture those chemicals not removed by the reverse osmosis membrane • optionally an ultraviolet lamp for sterilizing any microbes that may escape filtering by the reverse osmosis membrane • latest developments in the sphere include nano materials and membranes 	<p>Water filtration system installed under the counter, connected directly to the water pipe, purified water is directly connected with the pipe to the faucet (water is not accumulated in the tank), the flow of water is remained almost at the same level. The system can include the following filters:</p> <ul style="list-style-type: none"> • a sediment filter • an activated carbon filter • mechanical filter • ultraviolet lamp filter
Advantages	<ul style="list-style-type: none"> • Improves taste, odor and appearance • Easy to install • Flushes away pollutants, does not collect them • Highly effective purification process, removes impurities and particles larger than .001 microns³ • Consumes no energy • Softens the water 	<ul style="list-style-type: none"> • Flexibility of choosing types of filters • Easy to install and change filters • Consumes no energy • Takes relatively little space under the counter • High productivity rate, on average 2-3 liters per minute • Water is not demineralized⁴ and the taste, odor is improved • Relatively cheaper (the price depends on the types of filters)

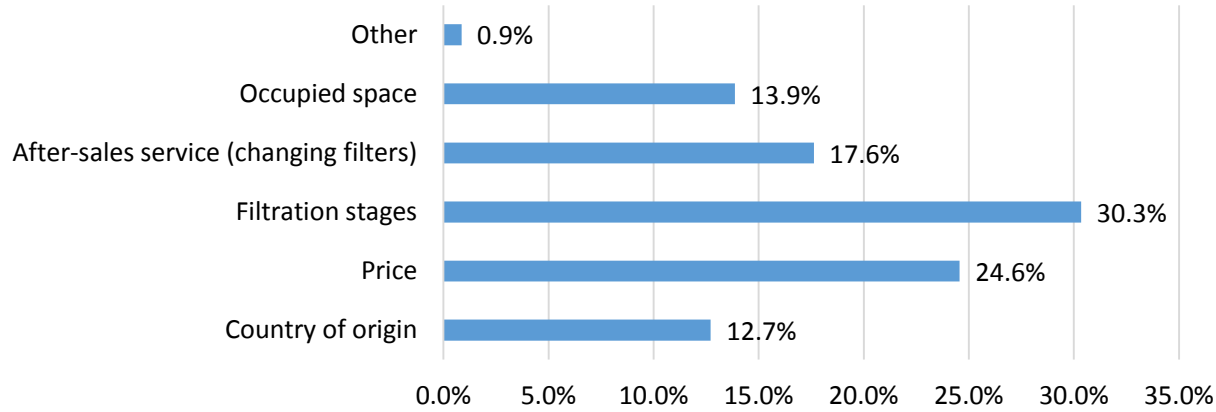
³ These particles include sodium, sulfate, calcium, potassium, nitrate, iron, zinc, mercury, selenium, phosphate, lead, arsenic, magnesium, nickel, fluoride, manganese, cadmium, barium, cyanide, chloride. R.O. system will remove on average 80-98% of these elements in the water.

⁴ Main particles removed are chlorine, lead, bacteria, petroleum, phenol, pesticides, heavy metals, colloidal iron

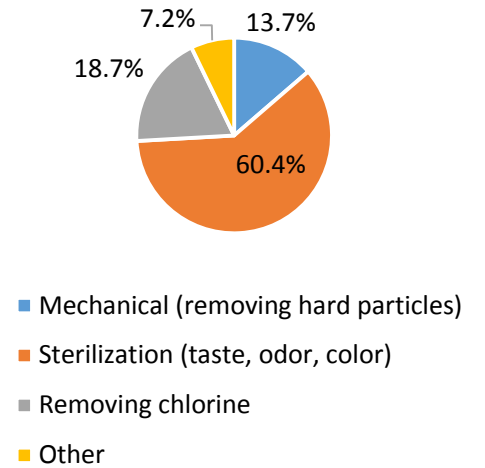
<p>Disadvantages</p>	<ul style="list-style-type: none"> • Low productivity, in most cases 5-7 liters per hour • Produces 1 liters of clean water per 4-6 liters of trap water (water waste is high) • Filters changing may need some specialist work • Occupies relatively larger space under the counter • The small pores of an R.O. system can become clogged even by common chlorine, and the system should be maintained • The water is demineralized, since most mineral particles (including sodium, calcium, magnesium, magnesium, and iron) are larger than water molecules, and they are removed by the membrane of the R.O. system • Relatively expensive compared to 3-stage UTC filters (the price depends also on the type of filters) 	<ul style="list-style-type: none"> • Small amount of water waste • Water is not absolutely purified • If the water is too hard, the taste of it after filtration will be slightly salty • If the temperature under the counter is above 38°C, the filter should not be used
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Exhibit 4: Customer survey results

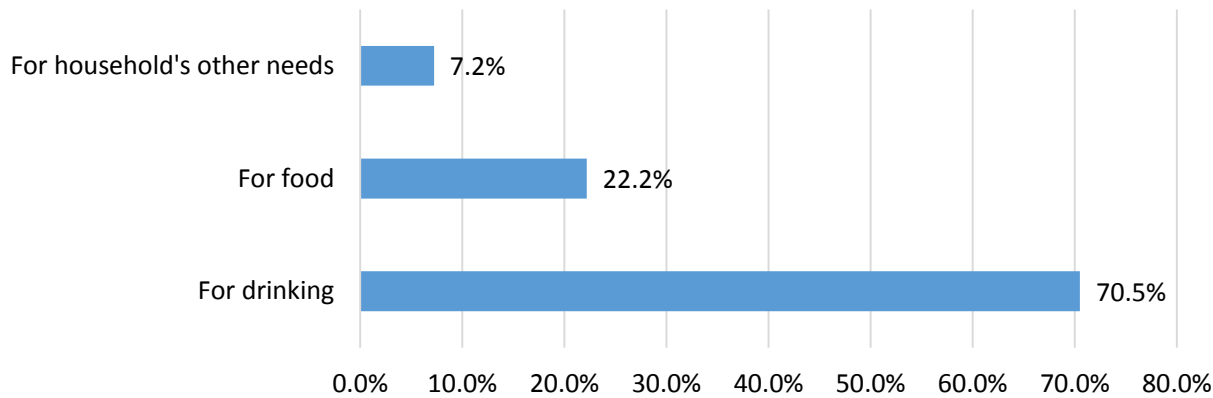
7. Most important factors when choosing the system.



6. What stage of water filtration do you prefer.



8. The purpose of filtered water usage.



5. For water filtration system you are ready to pay.

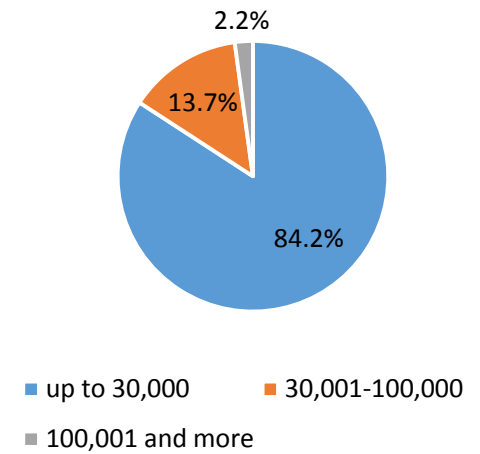
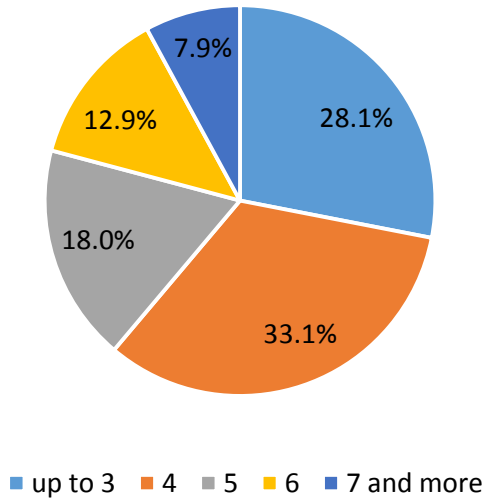
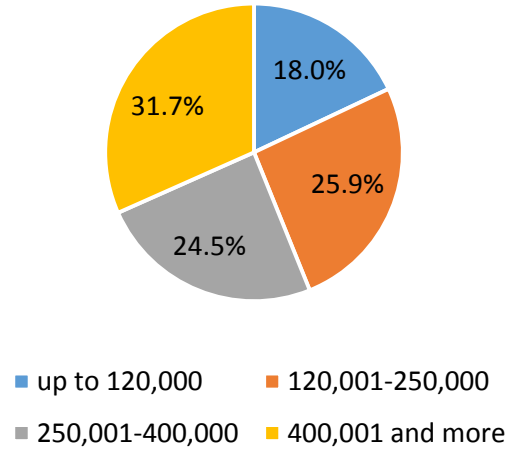


Exhibit 4: Customer survey results (continued)

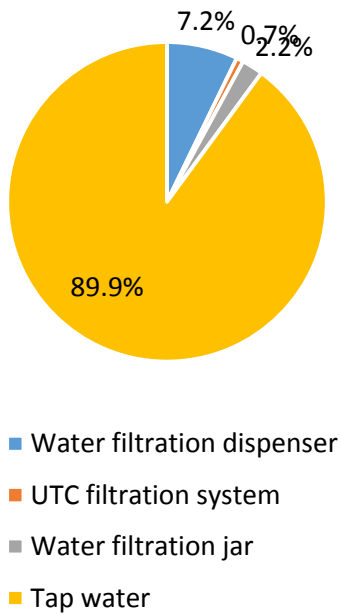
1. Number of household members



2. Average monthly income of household



3. What is the source of water you consume at home.



4. Comment on the quality of you tap water.

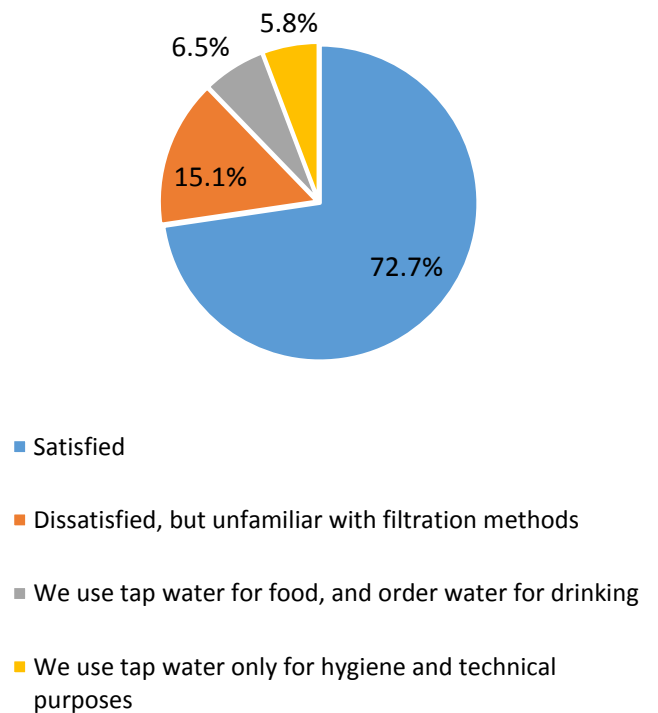


Exhibit 5: Demand estimation findings

Table 2: Identified price ranges from survey respondents

Price range, AMD	Respondents	Quantity	Price for demand curve
up to 30,000	174	211	30,000
30,000-100,000	32	37	70,000
100,001 and more	5	5	110,000

