

TechTasker: Electronic device repairing digital platform connecting device owner and freelance repairmen

Abdul Rahman Ahmad Dahlan¹, Nazmus Sakib², Tahmeed Anjum Hossain³

^{1,2,3}Kulliyyah of Information and Communication Technology, International Islamic University Malaysia

Abstract- The purpose of this paper is to propose a conceptual digital platform where it is possible to connect malfunctioned electronic device owners and the repairmen to get the repairing done. This is a Consumer-to-Consumer (C2C) business model where the malfunctioned electronic device owners will be able to find a repairman to repair their devices. On the other side, for the freelance repairmen this solution will enable them to find clients easily and effectively. As people feel hectic to go shopping in repairing their devices, the proposed digital platform shall become a convenient platform.

Index Terms- C2C, digital platform, electronic device, 4 Lenses of Innovation, BMC, VPD.

I. INTRODUCTION

The world we know is changing every day along with the evolving technologies. There are new electronic devices, new inventions coming everyday everywhere. Everyday lifestyle of people is changing. Technology is here helping us to enrich ourselves and our way of living. People are using the internet, devices in every possible way they can to make the full use of it. There are many things that we can do by just some click which were so hectic 10 years ago. Now life has become easier than ever with the help of hundreds of types of electronic devices that technology gifted us in the last few decades. But the number of malfunctioned devices is also increasing at an alarming rate. People find it hard and painful to go to shops to fix their devices. This is where the need of a digital platform emerges, which will connect the device owner and the freelance repairmen.

II. BACKGROUND

As using devices in our daily life is increasing, there also many of us who has devices which they seldom use or it has some problem in it. Moreover, there also so many freelancers which people do not know about can actually fix their devices with lower cost than the repair-shops. Currently, there are multiple home services companies in Malaysia who provides home painting services, plumber services etc. but none of them provides services to fix devices like mobile, laptop etc. So, there should be some of a digital platform to solve this issue so that people won't have to go to find a repair shop to repair their devices. By using the platform, device owners can contact and interact with freelancer repairmen and get their devices repaired.

III. PROBLEM STATEMENT

There are many skilled repairmen who want to do freelance repairing for electronic devices. These repairmen are looking for freelance jobs but they don't always get clients for lack of marketing, communication, and publicity. As a result, they end up working on a repairing workshop and share their income with the workshop. On the other hand, there are device owners who don't always have a trusted destination to go with their malfunctioned device once the warranty, if any, is over. Device owners have always been concerned about getting skilled repairmen and getting jobs done within proper charges. We want to become a trusted media which is required to solve this problem by creating a bridge between these freelance repairmen and device owners.

IV. LITERATURE REVIEW

A. ServisHero

ServisHero is a company that provides local services on-demand via a mobile app in Southeast Asia. This company was Founded in June 2015. ServisHero is based in Malaysia but already the service is available in Singapore and Thailand. They wanted to create a more effective way for consumers to find and compare local services in Southeast Asia. ServisHero claims to connect quality(as measured by their review and rating system) service providers via their mobile (including Android and iOS) and web applications. Consumers can use these applications to search and find from thousands of available service providers.

Service providers need buy prepaid credits on the service that will allow them to bid for jobs. Service providers can not bid if there is no credit in the provider's account. Credits do not guarantee a job. That incentives them to keep costs competitive and, as

the company is not receiving any share, there's no extra charges added on. The company recommends leaving job posts and job requests for at least 24 hours to get enough responds. However, most of the time people responds to such postings within hours.

ServiceHero is already receiving big investments from investors like YTL, Golden Gate Ventures, Cradle Seed Ventures, Lelong.my.

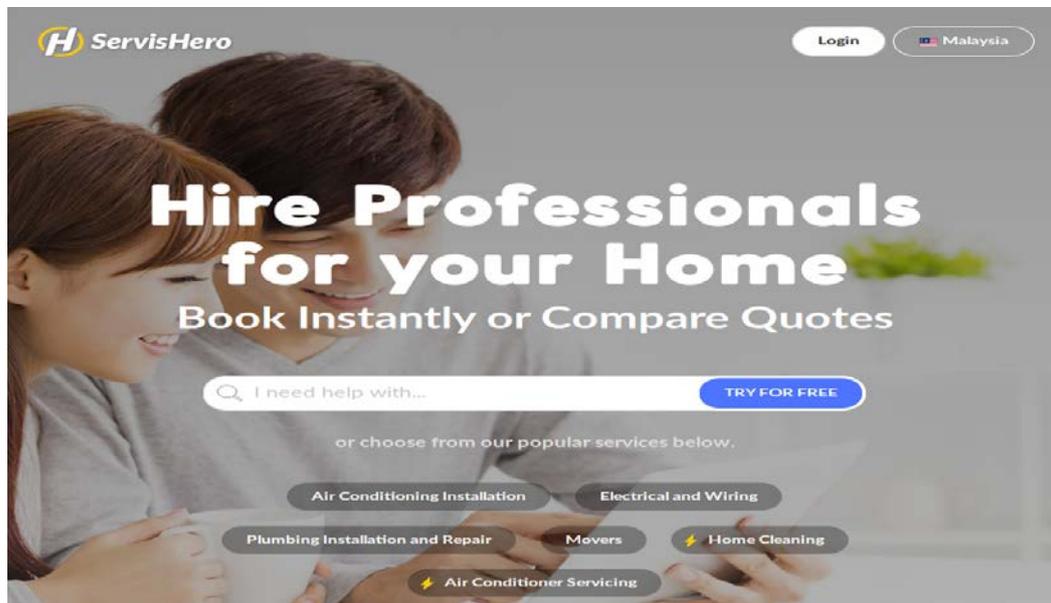


Figure 1: ServisHero website's user interface

B. Kaodim

The Kaodim group is supported by leading venture capitalists including BEENEXT, East Ventures, KK Fund, 500 Startups and Venturra Capital. Kaodim enables users to find any service professional like a plumber, a wedding photographer, a yoga teacher, or an interior designer. They advertise themselves as the go-to platform helping customers to get the jobs done that are important to their city lives, everything from modeling their homes to photography, learning new skills and so more. At this moment, Kaodim is serving in Malaysia, Philippines, Singapore, and Indonesia. Their monetization model is similar to ServisHero's monetization model.

Kaodim provides a good user experience in their web and mobile applications. In order to book a service, users need to choose the task, select the date and time and check out with payments. Users also have the choice to book for a service in advance via these applications. Kaodim has been using their customer's usage data to understand customer's usage habit to take better business decisions. Kaodim also have both the iOS and Android application as well as a website but the problem is at the point of our inspection their Android app was not working as per several customer reviews in the Google Play store.

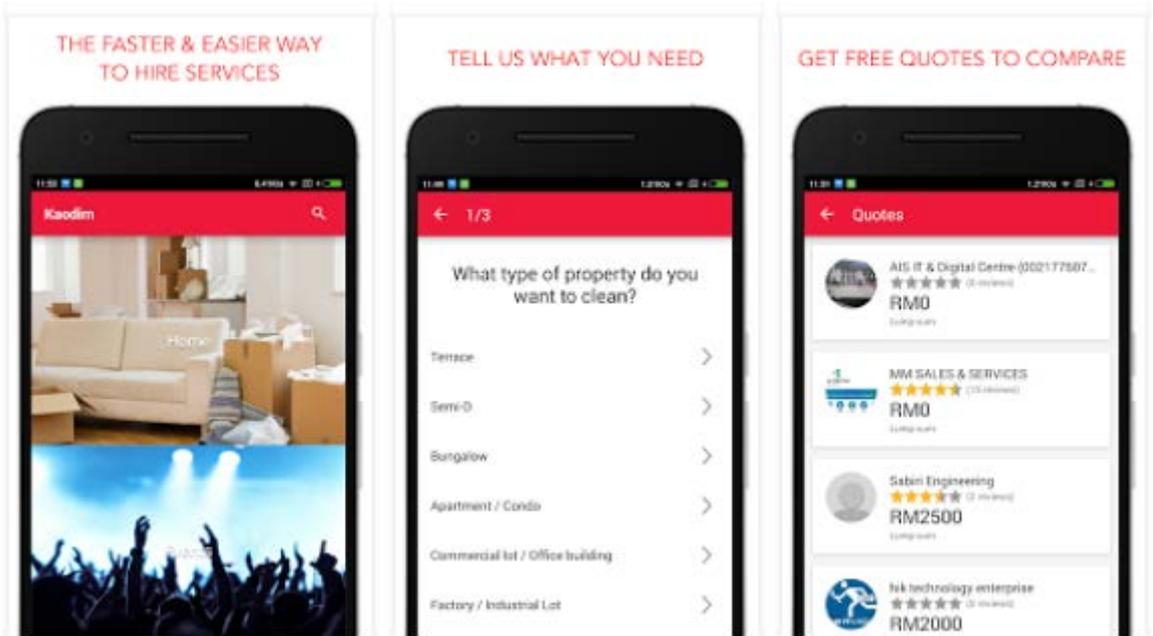


Figure 2: Kaodim android app's user interface

C. Page Advisor

Page Advisor is an organization similar to ServisHero and Kaodim based on Singapore. Page Advisor was conceptualized and founded by Fabian Lim, famous serial online entrepreneur from Singapore. PageAdvisor also has Android, iOS, and web application to serve their users. Service seekers can find service providers to do gardening, house cleaning, handyman tasks, delivery jobs and so on. Service providers for more creative tasks like graphic designers, photographers and IT support personnel can also be found in the Page Advisors system. PageAdvisor holds the service charge in their system until the job is done, then the service charge is delivered to the service provider. The system will deduct the service fee (15%) which includes Insurance, Handling and and transaction costs in this process.

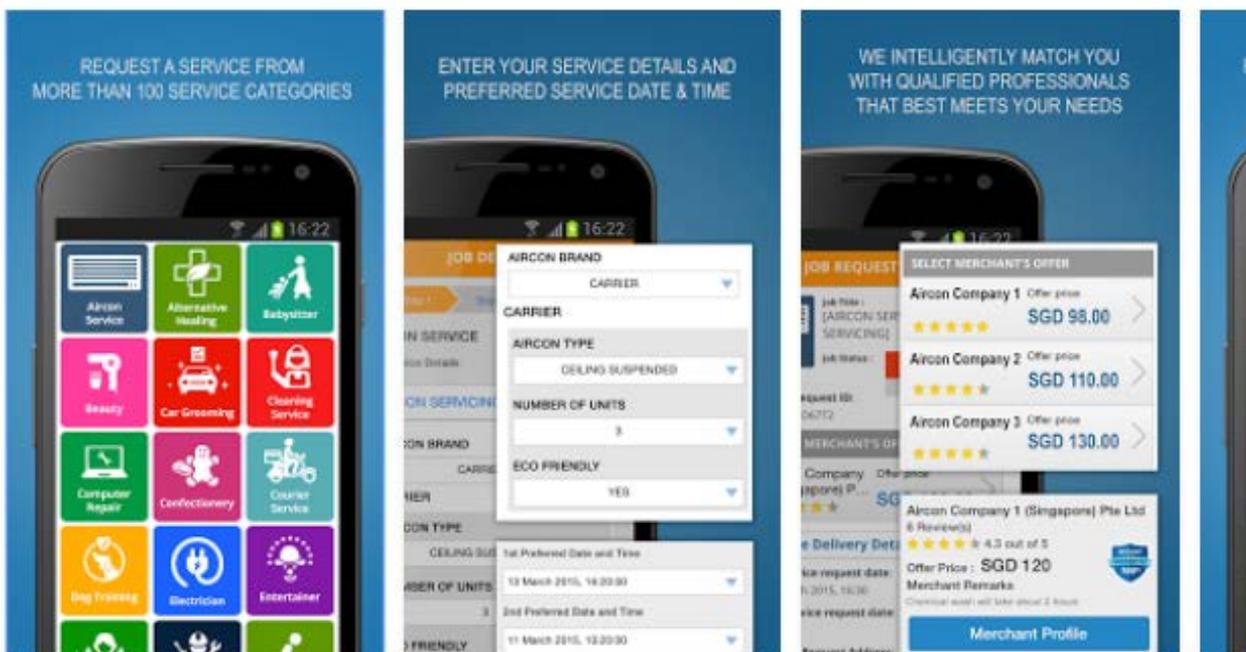


Figure 3: Page Advisor's user interface

Figure 3 shows some example screenshots from Page Advisor’s mobile application’s user interface.

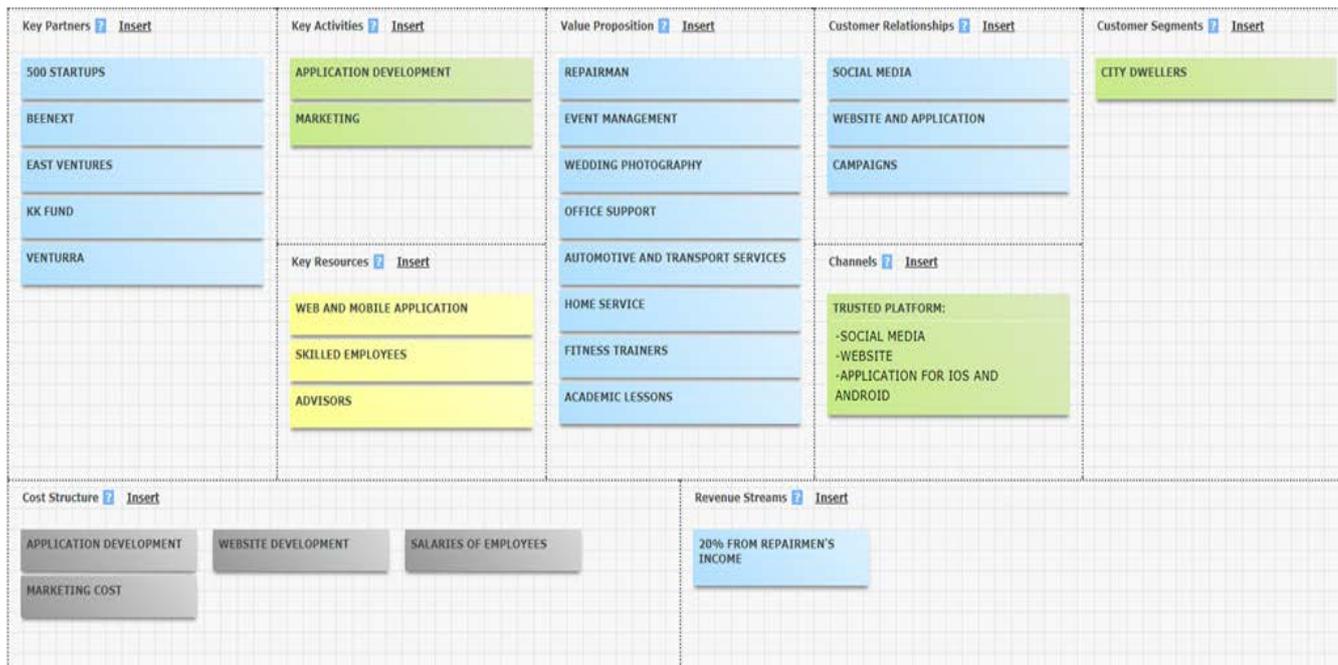


Figure 4: BMC of Page Advisor

Figure 4 shows the business model canvas of Page Advisor using the 9 building blocks of business model.

V. STRATEGY CANVAS



Figure 5: Strategy canvas

Figure 5 shows the strategy canvas that has been applied to create a new market space as well as to make the competition irrelevant between the current systems.

VI. ENVIRONMENT MAP

A. Key trends

According to Guillemain and Patrick (2015), the number of Internet-connected devices surpassed the number of human beings on the planet in 2011, and by 2020, Internet-connected devices are expected to number between 26 billion and 50 billion. For every Internet-connected PC or handset, there will be 5–10 other types of devices sold with native Internet connectivity. Therefore, With the emergence of IoT devices, we will have growing varieties of devices to be worried about and the need for a unified repair-service will arise in no time. On the other hand, according to Frost and Sullivan (2015), “Malaysia to have 125 million connected devices in 2025 with over 58 million mobile subscribers. Ninety-five percent of all Netizens, or internet users, will be active social network users, presenting a huge potential for digital marketing and e-commerce” (p.10); which tells us why reaching to the customers via online is more reasonable. Thus, we can harness the trends we mentioned above and ‘harnessing the trends’ is the second lense of the 4 lenses of innovation.

B. Market forces

A square-trade study shows that nearly 1 out of every 3 laptops fails in a 3-years’ time duration. The malfunction rate alone exceeds 20% at the 3-year mark. There is also a notable acceleration of malfunctions in the second and third years. While fewer than 5% of laptops failed from malfunctions in the first year, an additional 8% fail in each subsequent year. Accidents cause a further 11% of laptops to break over 3 years, making the total failure rate nearly one-third of all units. Generally, consumer laptops are sold with a 3-year warranty period. Therefore, one out of every 3 laptops will require repairing servicing that will not be covered by warranties. According to the Square Trade Survey (2009), the scenario with other electronic devices is not that different. We also need to know customer’s needs in order to give better service. From the statistics, we can understand the demand but we need to know more about customers by doing surveys and getting feedback. We need to learn to live inside the customer’s skin. A few years ago, IBM ran a great ad with the headline, “Stop selling what you have. Start selling what they need.” Understanding needs is the 4th lense of innovation.

C. Macroeconomic forces

The device repairing industry is growing rapidly although it is still in its infant stages. For example, more than two-thirds of smartphone repair shop owners entered the market less than two years ago, most of them have no previous experience specific to the industry. Additionally, most of these repair shops are “one-man shows,” and more than three-quarters have fewer than five employees. This indicates it is relatively easy to enter the smartphone repair industry at this point.

D. Industry forces

Device repairing industry has always depended on small local businesses when it comes to products that do not have warranty anymore. There is currently no platform which connects device repairmen and device owners effectively in Malaysia. Thus, TechTasker will not face any direct competitor initially. The domain of electronic device makes TechTasker different from other similar home service platforms.

VII. INITIAL BUSINESS MODEL CANVAS

Business Model Canvas is a strategic management and lean start-up template for developing new or documenting existing business models consisting of 9 building blocks of a business model. (Osterwalder et al. n.d.)

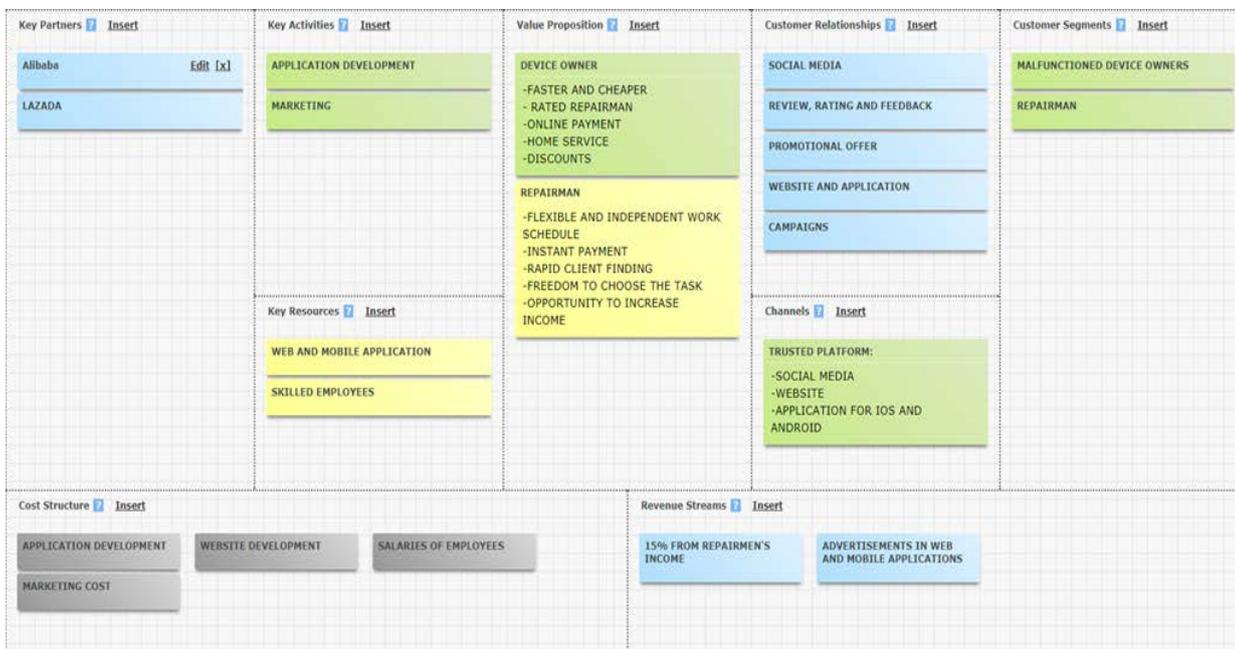


Figure 5: Initial

business model canvas

VIII. INITIAL VALUE PROPOSITION DIAGRAM

The value proposition canvas which consists of value map and customer profile has been created. This canvas is created after systematic analysis of customer’s needs and problem. value proposition canvas helps to visualize the business plan and identify business risk early in the planning phase. Such models are useful to describe how the products and services create value to the customers.

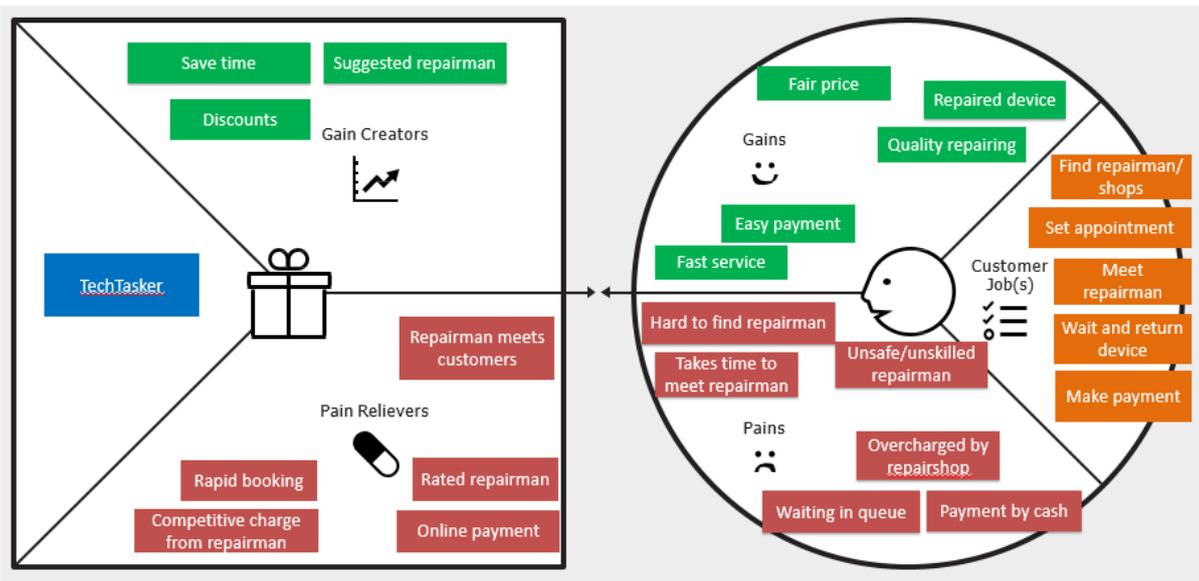


Figure 6: Initial value proposition diagram for client

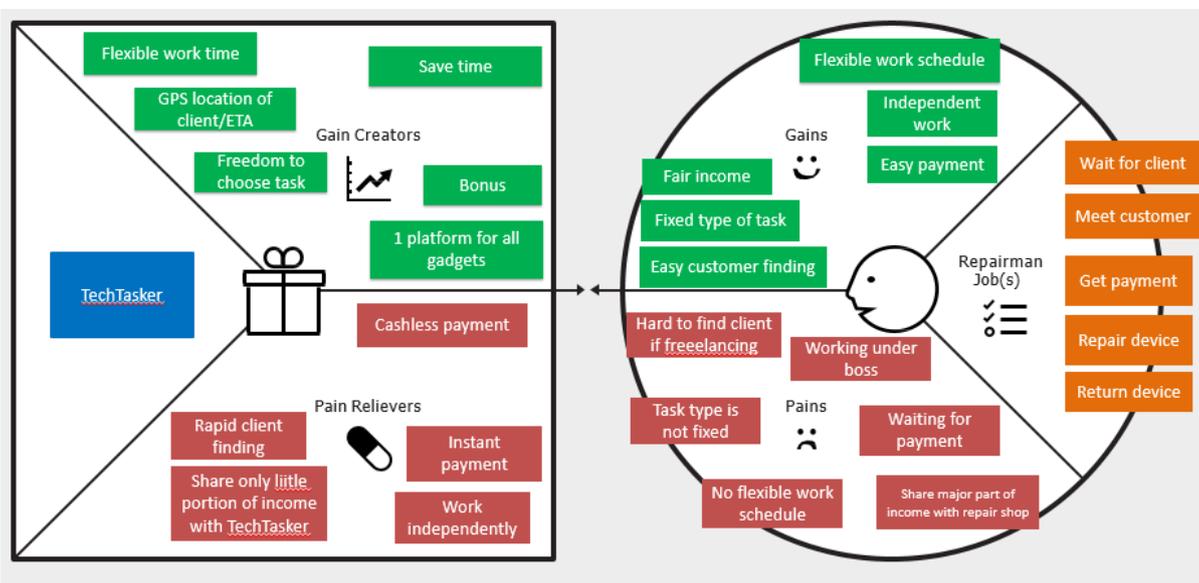


Figure 7: Initial value proposition diagram for repairman

IX. VALIDATION OF INITIAL BUSINESS MODEL

We have conducted an online survey and interview to validate and refine our business plan. Here we have visually represented the online survey (conducted through google forms) and interview results. According to the survey report below, we can see that 76.4% people who usually visited repair shops to fix their devices. The rest of them are repairmen.

What is your preferred method to fix a malfunctioned gadget?

55 responses

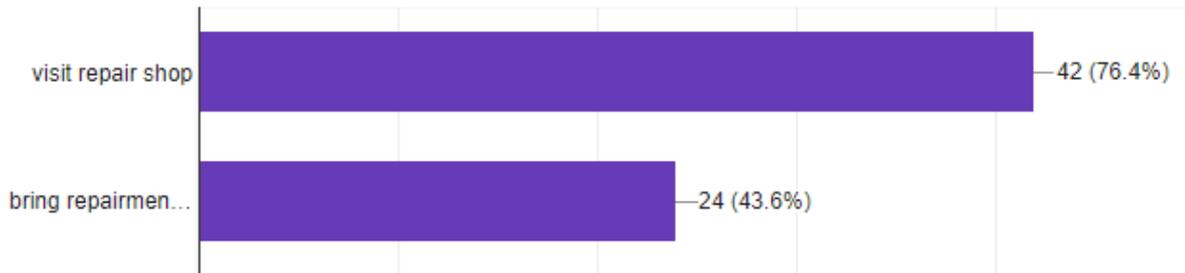


Figure 8: Preferred method of respondents to fix a device

Moreover, we also can see that among 55 people who completed the survey, 46 of them said that they usually fix their smartphone among their electronic devices. Which means percentage is 83.6% which is the highest in the graph. The percentage of repairing laptop is quite similar to repairing smartphone which is 74.5%. By this graph, we understand the demand of repair shop among public.

What kind of Problems you have faced ?

55 responses

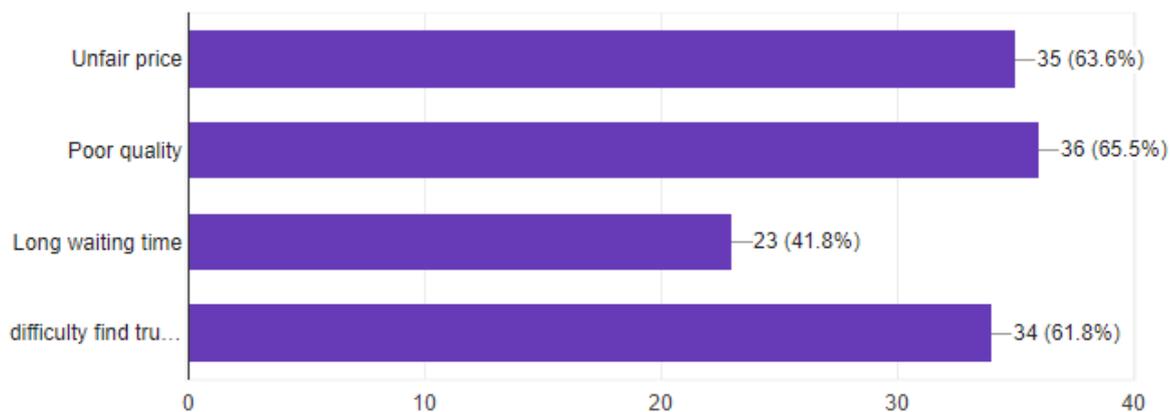


Figure 9: Kinds of problems faced by respondents.

What kind of malfunctioned gadget you have repaired ?

55 responses

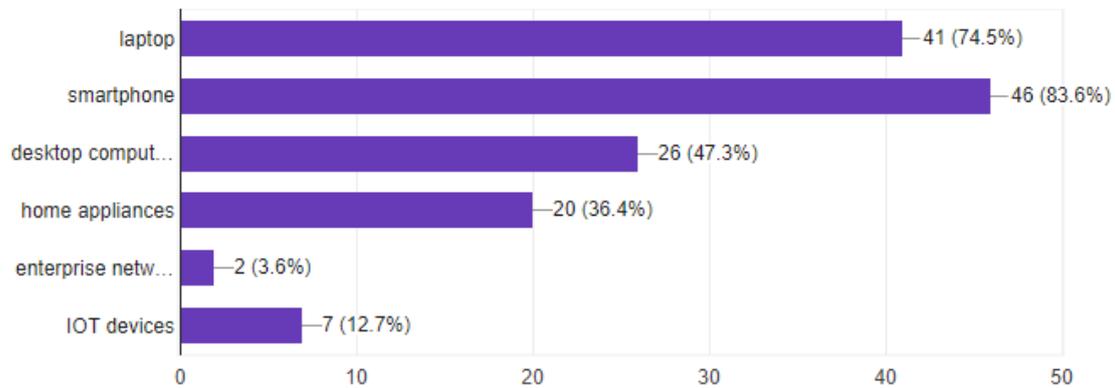


Figure 10: Kinds of gadgets respondents got repaired.

From this graph, we can see the pain people felt when they repaired their devices. Poor quality and unfair service is the most faced problem among the customers. The percentage of feeling these problems are 65.5% and 63.6% accordingly. Again, there are more problems which are felt by customers are long waiting time to get the device repaired in the graph below we can know about people’s demand about what they want in our app. The highest selected feature is review, rate, and feedback. On the second position, there is an option for online payment to make things is easier.

What features do you want in techtasker ?

55 responses

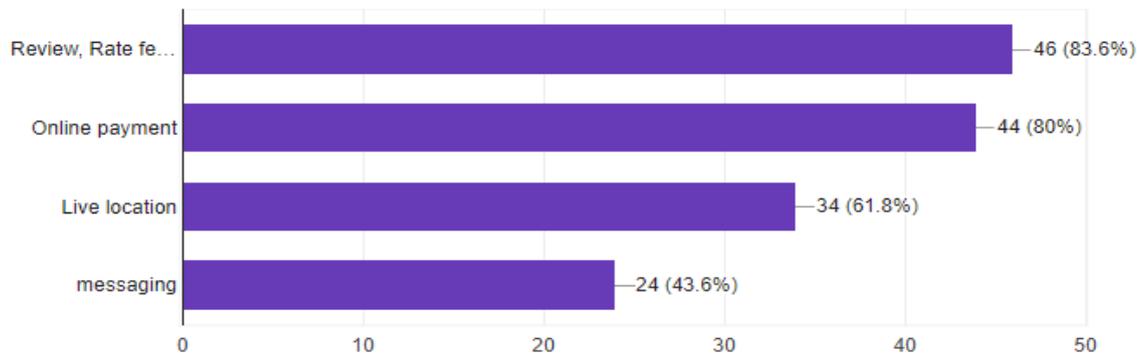


Figure 11: Kinds of features respondents wants.

In the graph below we can know about people’s demand about what they want in our app. The highest selected feature is review, rate, and feedback. On the second position, there is an option for online payment to make things is easier. They also want chat system to communicate easily with the repairman.

Have you ever used any home service application before ?

55 responses

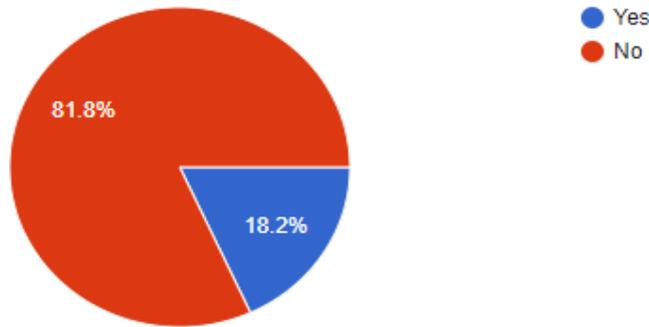


Figure 11: Experience of using home service application of respondents.

We can see that people who didn't use home service application before are above 80%. So, we have good opportunity to make our app a successful project.

X. CONCEPTUAL SOLUTION

ENHANCEMENT BUSINESS MODEL CANVAS

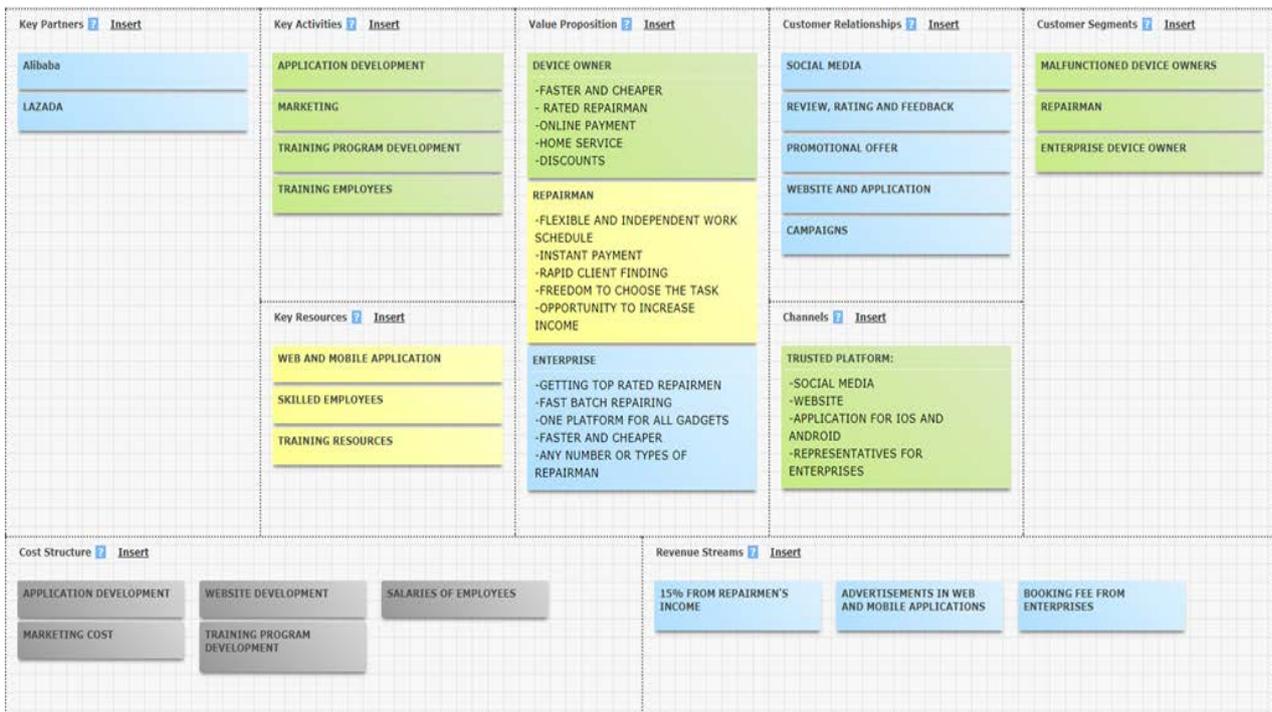


Figure 12: Enhanced business model canvas

A. Customer Segment: As in Figure 12, TechTasker adds device owners from enterprises. So, batch repairing can be done by top-rated repairmen in TechTasker's network. Key customer segments are now device owners, the person who repairs, device owner from enterprises.

B. Value Proposition: As we add enterprise device owner in the customer segments, here the new entry is that the enterprises can now get the top repairmen from TechTasker to get their batch repairing done.

C. Channels: The Five types of channels phases

1. Awareness- Advertising (Social Media, Website, etc.)
2. Evaluation-Surveys, Reviews on the mobile applications and website
3. Payment- Online payment, hand cash.
4. Delivery- Home delivery
5. After sales- Customer representatives, customer assistance.

D. Customer Relationship: Customer relationship maintenance will be basically done by the social media, website and mobile applications. We will also provide loyalty discount for the customers.

E. Key Resources: Our key resources are our web and mobile applications developer, our Administrators and the Advisors. We have also plan to recruit repairmen of our own. It will also help people who have any job.

F. Key Activities: Key activities are also one of the vital blocks for a company to run successfully. TechTasker will develop web and mobile application for the core business activities and it will be updated time to time to enhance its ability. Marketing, business and partnership development will also be necessary for mass and in targeted enterprise sectors.

G. Key Partners: Our key partners will be electrical part-supplier businesses: Alibaba and Lazada.com.my

H. Cost Structure Cost structure explains the cost that must be spent by the company in order to maintain the business. For TechTasker, the main costs will be on developing and maintaining the web and mobile applications. We will have to pay our developers, permanent employees and company advisors too.

I. Revenue stream: We will generate revenue from booking fees from repairmen, Ads and repairmen booking fees from enterprises.

ENHANCEMENT VALUE PROPOSITION CANVAS

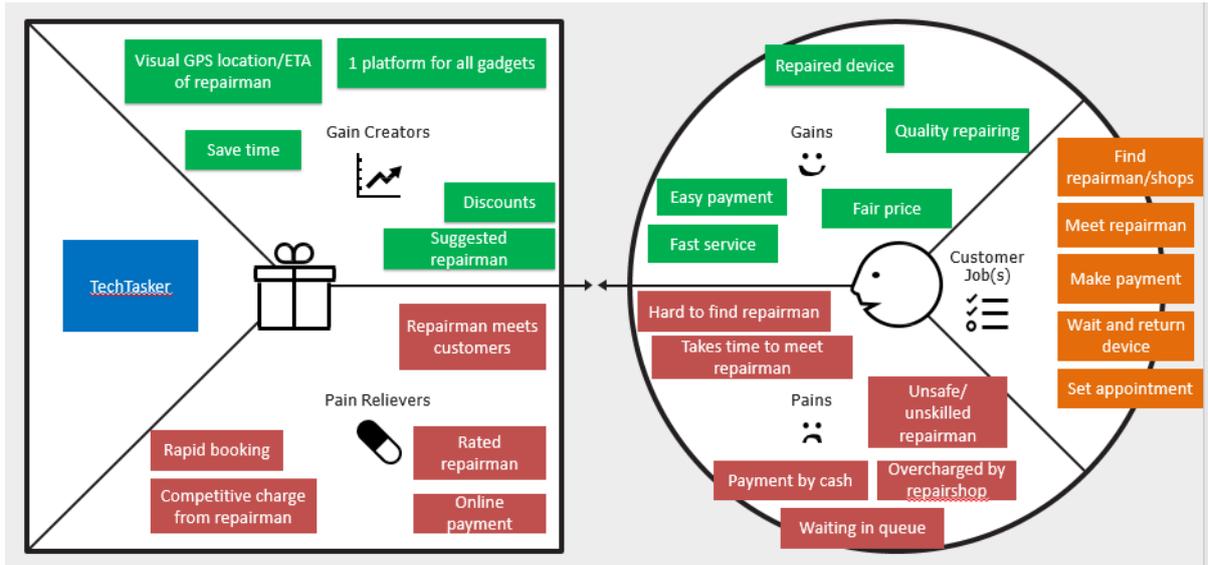


Figure 14: enhanced value proposition diagram for client

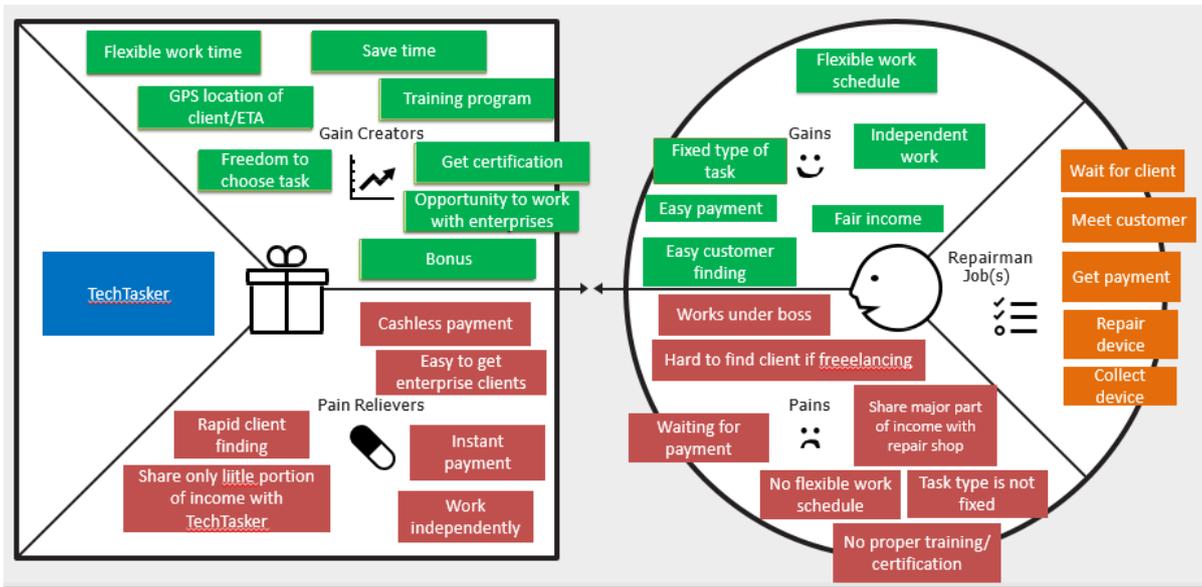


Figure 13: enhanced value proposition diagram for repairman

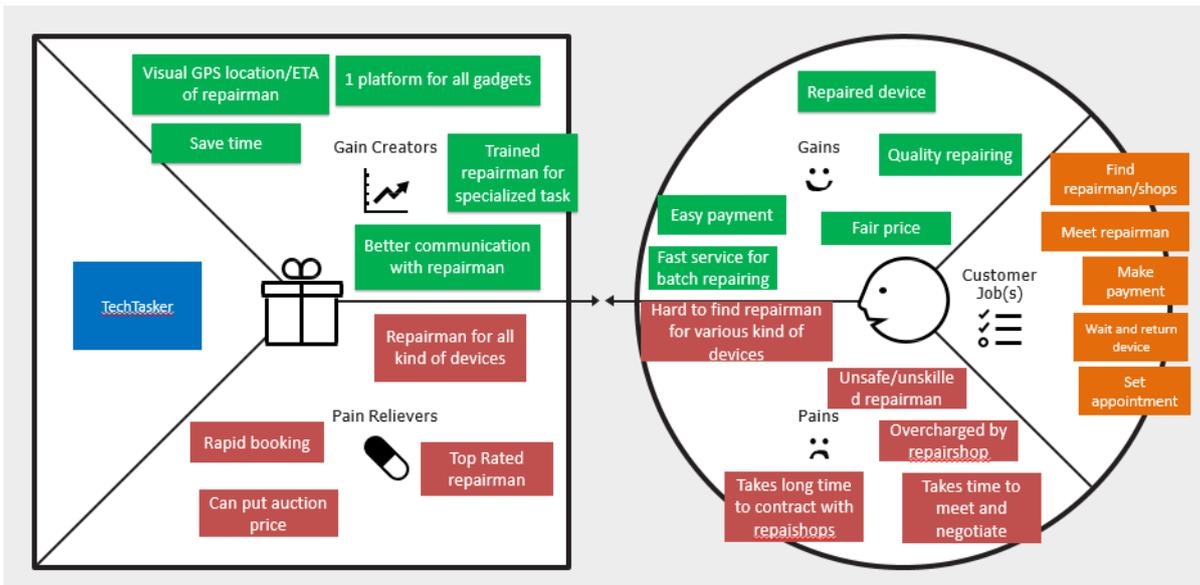


Figure 15: enhanced value proposition diagram for enterprise client

Product Key Features:

1. Visual GPS location
2. Online payment
3. Flexible work schedule
4. Portal to develop the communication between customer and repairman
5. Ratings and feedback system

XI. CONCLUSION & FUTURE WORKS

To conclude, this conceptual solution can provide good opportunities to part-time freelance repairmen to earn money online as well as help the malfunctioned device owners to find quality repairmen anytime, anywhere in Malaysia. This may also help to decrease the number of jobless people in the country. As businesses and services are going online, customers are looking for services online more than ever before, platforms like TechTasker will have the opportunity to lead the device repairing industry to adopt business models like C2C(Consumer to Consumer). In future, we have the plan to buy malfunctioned devices, repair them and sell them back to the market. We are also planning to build a E-waste management system with the help of our customer network. Such E-waste management system will help to achieve better profit while making the business more sustainable.

REFERENCES

1. Guillemin & Patrick, IoT-From Research and Innovation to Market Deployment IERC Cluster eBook 978-87-93102-95-8 P
2. Square -Trade Survey 2009, https://www.squaretrade.com/htm/pdf/SquareTrade_laptop_reliability_1109.pdf
3. Frost & Sullivan (2015). Mega Trends in Malaysia: Top Mega Trends in Malaysia to 2025 and the Implications for Business, Society, and Culture, 10-47.
4. <https://experimacfranchise.com/blog/7-stats-on-the-smartphone-repair-industrys-current-status-and-projected-growth/> Assessed on 3 November 2017.
5. <https://www.etradesupply.com/blog/cellphone-repair-industry-future/> Accessed on 3 November 2017.
6. <http://blog.rewatechnology.com/2017/05/the-current-and-future-states-of-mobile-phone-repair-industry/> Accessed on 3 November 2017.
7. <https://www.yelpblog.com/2012/04/survey-85-of-consumers-use-the-internet-to-find-local-businesses> Accessed on 3 November 2017.
8. <https://play.google.com/store/apps/details?id=com.kaodim.kaodimuserapp&hl=en> Accessed on 3 November 2017.
9. R. Gibson and A. Matallana, *The four lenses of innovation : a power tool for creative thinking*.
10. Ismahani Abdul Karim, Nurul Emilia Abdus Samad, AfiqahZawani Mohammed Noor, "Event2U e-commerce platform – Enabling mosques as integrated, holistic, comprehensive Centre-of-Excellence in enhancing the Muslim community’s wellbeing,” *Int. J. Sci. Res. Publ.*
11. Osterwalder, Alexander, Yves Pigneur, Tim Clark, and Alan Smith. n.d. *Business Model Generation : A Handbook for Visionaries, Game Changers, and Challengers*. Accessed December 31, 2017. [https:// books.google.com.my/books/about/Business_Model_Generation.html?id=Bjj8G3ttLWUC&redir_esc=y](https://books.google.com.my/books/about/Business_Model_Generation.html?id=Bjj8G3ttLWUC&redir_esc=y).

Authors

First Author – Abdul Rahman Ahmad Dahlan, arad@iium.edu.my.

Second Author – Nazmus Sakib, Bachelor of Computer Science, Kulliyah of Information and Communication Technology, International Islamic University Malaysia, imtiazsakib@gmail.com.

Third Author – Tahmeed Anjum Hossain, Bachelor of Computer Science, Kulliyah of Information and Communication Technology, International Islamic University Malaysia, TAHossain@gmail.com.