Vision and Scope Document

for

TVDroid

**Version 1.0 approved**

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**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
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|  |  |  |  |

# Business Requirements

## Background

We found that in order to have a smart TV station at your home, you will at least have to pay 17000 EGP and this is pretty expensive. So and idea of a small device that will be attached to your TV to turn it into a smart TV aroused.

## Business Opportunity

This product will reduce the cost of purchasing an actual smart TV by 70% as the actual smart TV products sold in Egypt ranges between 17000 to 50000 EGP and this product would add to the LCD non-smart TV that cost about 3500 EGP, maximum, 1500 EGP without considering mass production.

## Business Objectives and Success Criteria

This product will reduce the cost of purchasing an actual smart TV by 70% as the actual smart TV products sold in Egypt ranges between 17000 to 50000 EGP and this product would add to the LCD non-smart TV that cost about 3500 EGP, maximum, 1500 EGP without considering mass production.

To determine and measure success on this project some features must be met:

* A usable and reliable smart system beside the original TV system.
* Internet browser that plays audio and video smoothly on that operating system.
* Reliable Mobile app that acts as a remote control for the environment on the device.
* 75% accuracy for voice and hand recognition

Those previous success criteria should be met at least to announce the success of the project.

However, there are some factors that will influence achieving that success:

* The capabilities of the hardware of the development kit
* The accuracy of hand recognition hardware
* The clarity of the voice recognition hardware
* The accuracy of the image processing library

The cooperation of the supervisors and staff to achieve that success

## Customer or Market Needs

The product customers are not smart TV’s owners. The typical customer of the product should own a television with an HDMI port, an android smartphone and a wireless internet connection. The product is not targeting customers with a CRT television.

It will allow the customer to own some functionality of the Smart TV without the need of totally replacing the television they already own with a reasonable price.

## Business Risks

|  |  |  |  |
| --- | --- | --- | --- |
| Risk | Probability | Impact | Mitigation |
| GUI usability | Medium | Not time for make beta test for product | Make updated version with more user friendly |
| High Product Price | Low | Due to price of developing kit and all attached devices | Search to use anther kit with low coast and same features |
| Slow performance | Medium | Due to over load of attached HW drivers and installed SW on kit processor | Try to optimize our SW to be higher performance |
| System dependability in comparison to competing systems | Medium | Not enough time for testing sys for (stress) | Make more tests for system |
| (Product not compatible with all tv's versions ) Portability of the product | Low | No enough time  for making test for multi tv's versions. | Test more for different tv's version. |
| Customer doesn't have smart phone (Can not reach all customer segments) | Medium | Not all customers may purchase our products | Try to improve jester recognition to control tv from and not so need mobile APP |
| Remote Control Range( Bluetooth range) | Low | –- | Try to improve jester recognition to control tv from and not so need mobile APP |
| Incompatibility of the play store apps regarding controlling and display on the TV | High | As not all APPs controlling supported | Make cutomized app store |
| Not being able to remotely control the smart system | High | Incompatibility of different android versions between remote control and the development kit | The need to update the software of the smart phone to the compatible versions with the product |
| Bad Graphics resolution on the smart TV | Medium | Vga card in the kit with low possibilities | Use kit with high performance vga card |
| Low Remote mobile system stability and dependability | Low | Not enough time to test for stability | Make more tests to improve app stability |
| Cracking the system through Google Play store | Low | As tv will be connected for Internet and no security | Add firewals to protect system |
| The release of a competing product before this product | Low | –------ | –----- |

# Vision of the Solution

## Vision Statement

Producing a cheap, easy and user friendly gadget that can provide smart features for the ordinary TV such as voice and hand gesture control and more, to be available for everyone, with the power of Android OS on it, which make it easy to be updated very fast with aid of large numbers of developers already exist.

## Major Features

* Android mini pc smart system on the TV with android version 4.1 with all its capabilities except the camera
* Wifi Connection
* Bluetooth Connection with the smart phone
* Mobile app remote control on a smart phone
* Voice recognition for controlling the smart tv
* Hand recognition for controlling the smart tv

## Assumptions and Dependencies

AS-1: Technology interoperability won’t hinder the project’s progress.

DE-1: The project team will deliver work as scheduled.

DE-2: Basic applications will be implemented smoothly enabling us to finish on time.

AS-2: The needed resources will be available throughout the project.

DE-2: Mini PC Google TV Player and the camera are available.

DE-3: A television with an HDMI port or an LCD with an HDMI port.

AS-3: Changes to the project scope will follow a predefined change control system.

DE-1: Being able to deliver the project on time.

AS-4: Wireless network available.

DE-1: YouTube is working.

DE-2: Social Media websites are working.

AS-5: The project is built using Open Source software.

DE-1: There will be no legal issues so we are free to sell the product.

AS-6: Consumer own a smartphone and capable of downloading the remote application.

DE-1: The user will be able to remotely control the product.

AS-7: There is an available image of the android version on the Mini PC Google TV player that can be modified.

DE-1: The possibility of attaching extra accessories to be able to add extra features to the product.

# Scope and Limitations

## Scope of Initial Release

The initial release is an android mini pc with a working operating system and connected to the network through WIFI, along with the Bluetooth working correctly. The mobile application is used as a remote control over the Bluetooth.

## Scope of Subsequent Releases

Second version scope:

Voice recognition is triggered through the mobile application for controlling the TV functionalities with voice commands.

Third version scope:

Gestures recognition is available for interacting with the smart TV functionalities

## Limitations and Exclusions

TV tuner is implemented to become another feature of the smart system, the receiver is now connected to the mini pc so the smart features can work in parallel with the ordinary TV streaming.

# Business Context

## Stakeholder Profiles

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stakeholder | Major Benefits | Attitudes | Win Conditions | Constraints |
| Track Supervisors; ITI, JETS | Good Reputation | Encouraging completing the project with lowest costs and before deadline | Project completion and success | -Time limited delivery |
| Project leader;Eng.Sherif |  | Supportive during all the phases of the project | Project Completion and Success | -Limited presence due to engagement in other responsibilities |
| Project team | -Gaining experience  -can further use the project as a startup | Committed to finishing the project with optimum quality measures | Project success and completion | -committing to schedule  - |
| Suppliers : The Rikomagic chinese company | - Selling its products | Neutral | -Purchasing the development kit | -Availability of the product |
| Project customer; TV(LCD-LED) owners, LCD owners  -owning android smart phones | own a smart tv with minimum price, without the need of replacing the tv they already have. | Enthusiastic | -Project completion and the mass production of our product that would result in cheaper product. | -Product Reachability |
| Project testers | make sure the product is ready for release, gain experience | Neutral | Finding bugs in the project | Availability of testers |
| TV vendors; Samsung,Toshiba,Sharp,LG | -Increase their market share as their would be no need to buy the expensive smart tvs | Enthusiastic | -Project completion and the mass production of our product that would result in cheaper product. |  |
| Competitors ( SMART TV vendors) | Negative – no benefits | Negative and may produce more features to lessen the value of our product | Succeeding in beating our product with new features |  |
| legal aides | quick access to data | resistant unless product is keystroke-compatible with current system | ability to handle much larger database than current system; easy to learn | no budget for retraining |
| editors | fewer errors in work | highly receptive, but expect high usability | automatic error correction; ease of use; high reliability | must run on low-end workstations |
| executives | increased revenue | see product as avenue to 25% increase in market share | richer feature set than competitors; time to market | maximum budget = $1.4M |

## Project Priorities

|  |  |  |  |
| --- | --- | --- | --- |
| Dimension | Constraint (state limits) | Driver (state objective) | Degree of Freedom (state allowable range) |
| **Features** | -Android mini pc smart system on the TV with android version 4.1 with all its capabilities except the camera  -Wifi Connection  -Bluetooth Connection with the smart phone  -Mobile app remote control on a smart phone  -Voice recognition for controlling the smart tv  -Hand recognition for controlling the smart tv | -acquiring an acceptable market share with the other competing products  -enhancing the user experience with the various features we proposed  -Making use of the android on the smart phones instead of needing an infrared remote control | -70-80% of high priority features must be included in release 1.0  -Small range of hand recognition |
| **Quality** | -Medium capabilities of the hardware of the development kit  -Above average accuracy of the hardware of the smart phone  -Medium accuracy of the hand recognizing hardware | -Usable GUI and reliable mini pc system  -Playing Multimedia Smoothly  -The low efficiency of the hardware of the hand recognition hardware | 80-90% of user acceptance tests must pass for release 1.0, 95-98% for release 1.1 |
| **Cost** | -Price of development Kit and its accessories  -mental development efforts | - the need for higher hardware capabilities for this product | budget overrun up to 15% acceptable without executive review |
| **Schedule** | -Time constraints  -Sudden Changes in plans | release 1.0 to be available by the end of the intake with all the features |  |

## Operating Environment

The operating environment of the product is limited to the area surrounding the TV or LCD only. Most of the data may be preserved by being synced to the Google account linked to the Android on the kit, therefore the access security controls and data protectionis preserved by giving their user name and password. The product will fully function with simple requirements which are a power supply and a WIFI connection. Our Users are widely distrusted geographically all over the world with different time zones. They will need to access our product every time they want to view pictures playing games, or watch videos on their own TV, moreover if they want to connect to the internet for browsing, checking mail, downloading apps or chatting.