



HUBZ PROJECT

Project Final Report: March 2019



Adam Smith

Intrepid Minds Ltd

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Executive Summary

The Hubz project is a courier network that connects small and medium size enterprises in rural communities to the world of national and international logistics. The network provides a regular transport service to rural vendors that enables them to move their products to strategic hubs for onward transport to national, regional and eventually international markets. The team, led by Intrepid Minds, has developed, a system that has secure links between the different service providers, coupled with affordable, sustainable and dependable technology in use around the world in logistics, port and airport operations.

In developing Hubz, Intrepid Minds, has responded to the greater than expected aspirations of community leaders and the drive of the individuals within South Africa. Community aspirations sparked conversations on selling curios, raw materials and on ways to improve marketing, sales, revenue generation and sustainable growth. Conversations expanded to cover national and wider distribution of community products. This stakeholder dialogue has been invaluable in the design of Hubz.

In designing Hubz, Intrepid Minds, has used the best of common logistic/digital web-based software platforms and introduced new features from other sectors (e.g. logistics, defence, critical national infrastructure, transport) in the user interfaces. These interfaces set up contracts between vendor and courier, track the process from collection to delivery and enable swift payment. The system has in-built security and anti-tamper tags. The design ethos is to make the technology as simple as possible, which means the user interface will be simple, clean, instinctive and intuitive, making Hubz attractive to individual curio artisans as well as global logistics companies.

Intrepid Minds has pledged over £150,000 in the next year including the project's team ongoing work on enhancing the system technology. Building on the project's success Intrepid Minds will submit a proposal to DFID for funding a second phase of Hubz's development. In addition, Intrepid Minds, will seek financing from other sources for the wider commercialisation of Hubz.

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Acronyms

| | |
|--------|---|
| AIS | Automatic Identification System (Marine/Shipping) |
| AWS | Amazon Web Services |
| DFID | Department for International Development |
| GPS | Global Positioning System |
| HLG | Hubz Logistics |
| HMP | Hubz Market Place |
| HSV | Hubz Services |
| IM | Intrepid Minds |
| IoT | Internet of Things |
| RFID | Radio Frequency Identification |
| SA | South Africa |
| SAPS | South African Police Services |
| SANRAL | South African National Roads Agency |
| SMEs | Small and medium sized enterprises |
| UK | United Kingdom |

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1 Hubz - The Origins

Intrepid Minds (IM) outlines the genesis of Hubz and highlights its aims and the approach for its end users, small and medium sized enterprises.

1.1 How the idea was born

Hubz started from observing the many manual steps involved in brokering the transfer of goods along the logistic chain in South Africa. At each step a broker negotiates a contract taking the goods from source to hub locations and to the final destination, potentially an export hub. Each individual step is a source of delay that increases the transit time and the transport cost, and ultimately the price the customer pays. This labour-intensive model cannot compete with more automated systems, but until recently was the only option available to small businesses and entrepreneurs.

Intrepid Minds (IM) works in many different sectors collecting, processing, and reporting digitised data, an operation known as “big data analysis” for improving the operational efficiency of our clients. IM saw an opportunity to apply its in-house expertise to the logistics chain challenges as way of developing a digitised data model. With the support of Vodafone, our ‘Internet of Things” (IoT) partner, and our logistics specialists in South Africa TJ Handlings, IM was ready to put together a viable and relatively low risk solution.

1.2 Hubz’s aims

Hubz aspires to optimise the transport of goods between rural and urban communities, and within urban communities in South Africa with the aim of increasing the opportunities for small and medium-size enterprises (SMEs) to trade goods regionally within Africa and internationally

Hubz also aims to respond to the following DFID priorities:

- Tackling extreme poverty and helping the world’s most vulnerable: by primarily supporting and expanding small businesses and traders to create jobs and sustainable revenue at the grass-roots level;
- Strengthening resilience and response to crisis: by enhancing and utilising localised networks accessible to local and regional couriers;
- Promoting global prosperity: by linking small businesses and traders to international logistic companies to promote export trade;
- Delivering value for money: by creating an affordable, sustainable, secure alternative to major global logistics companies, initially within South Africa.

1.3 The Hubz concept

Hubz is a grassroots system that links the thousands of small business operators across South Africa and equips these businesses with the means to transport goods long distances across multi-modal networks. Hubz has two key deliverables:

- i. an online tool and app that individuals can log on to and buy space for the transport of their goods across our network;
- ii. a geo-tagging system that sustains the security of shipped goods.

Hubz’s ethos is to make the technology as simple as possible, which means the user interface will be simple, clean, instinctive and intuitive. To achieve this the user interface design is generated from already proven templates.

2 Hubz – The Development Phase

The development of Hubz involved identifying the challenges that SMEs encounter in marketing their products and the difficulties faced in using the established logistic chains. Understanding these challenges, defining assumptions and limitations as well as recognising community opportunities were key inputs to the design process.

2.1 Project Challenges

The challenges are summarised as follows:

- **Community involvement:** Business in South Africa is traditionally conducted on a person-to-person basis rather than via the internet or mobile devices. Changing this culture meant persuading small entrepreneurs of the advantage of using digital technology and developing a simple and intuitive system.
- **Individual identity security:** Moving a business to a digital platform involves registering customers, companies, drivers, trucks and other logistics equipment. This registration process is necessary for verification and validation of goods to ensure their full traceability and to guard against loss in transit.
- **Vehicle condition:** Operating an efficient logistics service with multiple links between organisations requires well-maintained vehicles. Although the vehicle age can be an indicator the regularity and quality of maintenance is critical. Hubz cannot monitor individual vehicle maintenance therefore all couriers sign an agreement to keep their vehicle clean and in good working order. In addition, recipients of packages are required to comment on vehicle condition when completing a delivery quality questionnaire.
- **Traffic conditions:** Roads in South Africa generally enable smooth travel between freight hubs. However, at critical times in the day some routes become congested causing long delays. Hubz challenge is to give drivers up to date information in order to navigate around these roads at these times.
- **Waiting time cost.** With traffic congestion comes cost, which has to be covered by the originating entity, in this case Hubz. In South Africa, many logistics companies take little responsibility for late delivery and pass on the cost of any delays to the client.
- **Online retail presence.** Early in the project it was realised that while goods could be transported through Hubz, the vendors Hubz were targeting did not usually have an online or global presence and so would not reach those markets unless they were supported.
- **Technical capability.** Getting SMEs to use Hubz would involve extensive training of people spread over a wide geographical area. Traditional classroom training methods would not be efficient, so Hubz has developed a self-learning method.
- **Market saturation.** IM recognises the potential for too many individual service providers entering the market following the experience of Uber. IM aims to mitigate this by differentiating on quality, convenience and security.

2.2 Project Assumptions

Some of the initial assumptions and the way that they were addressed are summarised as follows:

- IM assumed that it would be able to set up as an internet-based company out of the UK. This assumption was correct, however, IM was not able to set up a South Africa based internet domain as it did not have a registered in-country company.
- Couriers and small companies would have an online presence but in reality, very few had. This discovery subsequently involved extensive face to face discussions with logistics suppliers and couriers on the ground.
- The existing logistical chain operated on a paper-based system with hard-copy waybills in multiple copies held by the driver or faxed between the different locations. In some cases, images were taken of the

paperwork as 'digitised' copies but these images were not suitable for analysis of content. Hubz solution was to promote the use of an electronic form-based system that integrates with other systems that use international standards.

- All SMEs and transport operators would be reasonably competent in using mobile communications. People within large organisations and the younger generation are very familiar with modern technology and mobile devices. However, older people or those from less technical backgrounds found it more difficult to embrace the technology; as a result, Hubz incorporated an in-app narrative that guides the user through the set-up and operation process. Online training will also be made available in the near future.
- IM assumed people would just want to sell goods. It became clear however that individuals wanted to perform the transactions face to face using physical cash. Understanding this multi-tier transaction environment led to Hubz becoming a purchaser for different suppliers. For example, even though a vendor may be online, they may only deal in cash; bank accounts and debit cards may be foreign to them. IM supported these vendors and the set-up processes to overcome these problems. In order to show the benefits of these changes, for an interim period IM transacted in cash for orders that were placed online.
- Initially, Hubz's focus was within South Africa before potentially rolling out to other countries. However, it became clear that any South-African traded goods were automatically part of a regional and global network that Hubz would have to adapt to become successful.

2.3 Project Limitations

- Time and budget for Phase 1 limited in-country capacity restricting face-to-face contacts to a limited number of vendors;
- The discussions with vendors were limited by the products that could be marketed internationally. IM as a responsible company wanted to ensure that all stock was traceable, was accompanied by the correct certifications and had the necessary import/export approvals. This documentation was not available in several cases;
- Many of the products produced by individuals are one-offs. This mean online selling is difficult when aesthetic/artistic nature of the product may change from item to item. Consequently, such variation restricted the volume of products that IM could offer for trade;
- Limitations on the quantities of such products meant that sales would need to be based on the vendors own stock calculations;
- The goods targeted by the Project are initially limited to hand crafted curios, traditional clothing and bead work.

2.4 Project Opportunities

During the development phase, IM saw many demands for other services apart from Hubz central theme of logistics, which resulted in the development of Hubz Market Place, Hubz Services and Alkuto. These services are online platforms as follows:

- Hubz Market Place for trading consignments of larger volumes - 0.5 tonne and above;
- Hubz Services meets a growing demand for people to be virtually connected to reliable service people/organisations;
- Alkuto that brings together craftspeople in rural communities for trading a mix of artisanal and mass-produced items covering the commercial spectrum from low-priced to expensive goods.

Future opportunities identified by community leaders, attracted by Hubz and Alkuto, included trading in specialist rock, timber, metals, high value stones and crystals.

2.5 Hubz Processes

The Hubz platform is a common platform to all the Hubz options (Alkuto etc.) the process and functionality differs from one to another. This design enables the user community to access a wide range of features as described below:

Hubz Registration: A user is only required to input general personal details and a valid bank card to make transactions. For other services a user will need to include details of their company, their driving staff and their vehicles. These details are entered electronically and images are taken of any official paperwork. An extended credit check is also done for each entity.

Hubz Logistics (HLG). A buyer logs on to the HLG system and inputs the details of their goods including when and where they are to be collected and delivered. Hubz automatically calculates the different routes based on distance and journey time. This process may use a mix of our IM and other 3rd party logistics networks. A calculation of the duration and courier pricing is confirmed and the total price is then validated by the buyer allowing payment to be taken and held by Intrepid Minds in a holding account run by PayPal. All parties in the chain are then issued with delivery instructions and the goods are transferred from one to another and monitored using real time tracking. On delivery, the package is signed for using a pre-entered phone number and/or signature in order to validate the recipient person.

Hubz Market Place (HMP). A buyer logs onto the HMP system and requests a quantity of a listed product to be transported from one location to another, which could include international destinations. Often these products fluctuate in value, however the buyer also places a time limit for 'bids' to be received. Verified sellers then have a given time to place blind bids. Hubz adds to the purchase price the cost of transport from collection to delivery and the total cost is sent to the buyer. The buyer is then presented with a range of options for the product and after confirming the preferred option the payment is taken. The rest of the process then continues as per HLG.

Hubz Services (HSV). Currently this is an emerging part of the online platforms because not all businesses have the capability to sell online or provide an accurate and reliable quotations. HSV is designed to link buyers with sellers of services such as plumbing, air conditioning, electrical work, rather than products that can be categorised with a fixed price. HSV is similar to HMP, the buyer selects from a series of drop-down boxes a service, the location and a time slot, and a time to fulfil the service. Suppliers of the service have an allotted amount of time to verify they can complete the work within the given time slot and quote a price. Once confirmed, payment is taken and held until the job is completed.

Alkuto has a front-end registration facility for buyers who want to purchase products. The postage and packing are calculated automatically for each product based on the location, size and weight prior to purchase. This removes the need for any additional registration and these purchases simply link to the HLG system as an end to end delivery mechanism.

2.6 Hubz Technologies & Equipment

The backbone of Hubz was originally intended to be located on a small server installation that IM would control. However, due to the potential growth of the system more computing capacity and capability is necessary. It is not cost-effective to buy, install and configure independent servers, therefore the backbone of Hubz will now use Amazon Web Services (AWS). AWS has the capability to extend virtual server leasing that quickly matches any Hubz system demand. Having an adjustable, instant capability to extend our databases and accommodate more customers is central to the facility that is available to our userbase.

To ensure the system holds data efficiently and securely, the system was developed on multiple coding modules. These modules communicate with each other and pull information from one to another in order to validate the data quickly and use less centralised processing power. Creating this widely distributed network of modules also means that if one part of the system is hacked, the hackers do not get access to any data as the other parts of the system are physically and virtually located elsewhere, and have different security features. Building the system in this way allows IM to expand each part of Hubz in different ways while keeping standard interfaces.

The system display works on PCs, laptops and mobile devices regardless of the operating system or browser. IM has developed this system using a series of theme templates from a Wordpress base platform that allows the Hubz team to modify the interface without requiring any coding skills. This is ideal for the regular marketing and product updates envisaged in the future development.

Each Hubz app is linked to a mobile telephone with a global positioning system (GPS). For all companies and logistics entities that deal with Hubz their mobiles are permanently connected in order to allow analytics performance and tracking. This feature supports a safe driver module, a connection to the Hubz operations staff that can contact the driver to ensure driver safety, vehicle delays or breakdowns. The system communications are supported by the in-country Vodacom network.

To track different consignments as they travel around the world IM uses a continually expanding list of sensors. Telephony is only one-part of the system. This approach means Hubz is innovative because it brings together simple, easy to use technologies that users can trust to build a cohesive platform. IM aims to promote this by displaying our own metrics on the site and regularly updating our physical tagging with the latest technologies.

The other sensors are third party trackers used to track consignments through hub locations, as well as ship manifests and Automatic Identification System (AIS) ship monitoring data. Barcodes and Radio Frequency Identification (RFID) are used for tracking packages. Each buyer is sent a waybill which contains details all of the logistics data. The courier validates the data and seals it in a sticky, clear envelope which is attached to the package, the waybill is scanned and the package despatched. At each stage of the logistic chain, checks are carried out to ensure the security of the package and goods.

3 Hubz – Development results

3.1 Stakeholder Outcomes

It was recognised as part of the original brief for this Project that discussions with the people who would drive the Hubz community (vendors, couriers, transport companies, local leaders) were key to its success. Some of the observations we recorded as outcomes from these discussions are as follows:

- Local leaders know their community well. Discussions about supporting Hubz, turned into multiple discussions about supporting the growth of other small businesses in the local area.
- Vendors in remote areas know about international markets, they have very good knowledge of which products sell well to the various nationalities of tourists and what to emphasise in their discussions (e.g. the origin of the product, the sustainability, import regulations).
- Larger transport companies were more difficult to get on board than prospective couriers. Larger companies pushed for levels of exclusivity and reduced competition and couriers would actively tell their friends and colleagues. This was an interesting dynamic between the different sizes of companies.
- There are a lot of unlicensed couriers in South Africa and a steady volume (20-50 packages a day) of short haul goods are transferred using this route either by word of mouth or regular calls from a network of contacts. We were questioned regularly on the need for documentation and certification to join the Hubz network.
- Hubz discussions regularly turned into more of a community discussion than about the logistics. Getting people to buy into the concept seemed relatively easy, putting limits on how those connections could support other activities proved more difficult, there is certainly a desire to embrace new technology.

Intrepid Minds also held discussions with a number of larger logistics companies to support the structure of the goods transfer through their own infrastructure and services either on an individual transaction basis or as a regular service from hub hotspots. As a result of the discussions from this Project, Hubz is now:

- Working with DHL as a regular logistical hub supplier for the transfer of goods in and out of South Africa on time centric parcel movements, specifically the support is between South Africa, the UK and mainland Europe;
- Working with FedEx as a less regular logistical hub supplier for the transfer of goods between South Africa, the USA, Canada, Australia and New Zealand;
- Working with DSV on all goods to be internationally transferred using sea cargo;
- Engaged with Amazon on the tracking identification and logistics scalability of the Hubz service. Hubz, through Intrepid Minds is now linked to the Amazon Web Services infrastructure to scale up instantly the Hubz service as required without the need to purchase additional back end server infrastructure.

Hubz reviewed the licensing of couriers and transport companies with the South African Department of Transport, South African Police Service (SAPS) and the South African National Roads Agency (SANRAL). From our findings we were able to put together a series of documents which positively identified drivers, vehicles and insurance certification which would allow each courier or transport company to operate legally within the country and transport goods. This means that Hubz in most instances does not require any more than standard company insurance as it is our registered users who carry that liability, this keeps costs low throughout the service.

3.2 Hubz Revenue and Development

How Hubz obtains revenue from these services is a key question. Below are some of the dynamics of the services which are helping to support its growth:

- Hubz generates its revenue from taking a small slice of every transaction it completes. This can be as low as 0.5% and as high as 10% depending on the duration, goods, coordination, value and risk. The aim is to remain competitive and IM is aware of various level of prices charged for logistic services currently.

Hubz development will be driven by:

- Hubz doesn't charge for users to download the app, nor does it charge to register on any of the variants of its app. IM believes the time taken to register and positively identify oneself to the app is enough of an initial investment. IM is also able to monitor which phone is trying to register to prevent spoofing, repetition or other phishing or unsavoury practices designed to negatively affect the app.
- There is also no monthly or annual fee for receiving updates to the app. IM wants our users to see that the app is evolving and keep coming back to use it.
- The Hubz model means that IM will only pay for storage when the demand is required. For data storage this means that IM is able to turn on and off the virtual storage servers that it leases as demand fluctuates to keep storage charges to a minimum. For the physical storage of goods IM will begin by using its offices in South Africa and the UK. As demand increases IM will look to extend physical storage as required and negotiate with vendors a just in time approach to retrieving stock as sales are made.

3.3 Share Structure

Originally as part of the Hubz proposal IM mentioned that each driver would get shares. IM wanted to give something back to the community in this way. In discussions, it quickly became apparent that a lot of people did not understand the share structure but did understand and felt that the idea of a monetary dividend was a preferred solution. Intrepid Minds therefore decided to adopt and implement this type of benefit for its users.

Instead of shares, each driver can earn points depending on the jobs they complete, their volume, size and value. On an annual basis these points are totalled up and a dividend pot is then awarded to the community. This dividend pot is based on the number of points collected over the course of the year (which users are able to check using their online account) and the resulting sum of money is then paid directly to them.

Drivers registering as part of a company can link their points to that company. Drivers wishing to club together to form a virtual group which could then bid for opportunities as a single entity (thus reducing the number of movements between couriers and therefore perceived risk) could also link points scores. As Hubz rolls out its service to other countries this will continue to evolve with dividends at both a country and global level. IM is also considering the overall dividend being 40% grouped for smaller entities and 60% for larger entities in order to prevent a skew in favour of the larger companies.

4 Benefits of Hubz

4.1 Practical applications of the concept to the national transport system

IM foresees Hubz benefiting several key areas of the national transport system:

- South African cargo transport will, in future, rely much more on digitised systems, which will increase the efficiency of the logistics and also allow for real time analytics, such as identifying traffic congestion. Currently, Google Maps and others are built for light transport and don't take into account certain truck routes or mandatory rest stops. The Hubz system will provide drivers with this information in real time.
- Knowing how much available space there is in containers and understanding which companies perform the best will allow the brokerage system to give preference to those companies that move the greatest volume of freight effectively. Being digital also allows for better global trade because the electronic forms use a standard format that is interchangeable.
- Logistics transport has greater multi-modality through Hubz because the system has access to many different modes of transport, their departure and arrival times and a growing list of space available which allows Hubz to calculate the most efficient route possible. Indeed, Hubz's increasing knowledge of companies' performance builds a more effective system making paper-based systems obsolete.
- Optimising goods transport will reduce vehicular traffic, lower polluting emissions; and in urban areas ease congestion. These outcomes complemented by feedback from Hubz technology will provide data to local and national government on changing traffic patterns. Moreover, Hubz will benefit society by being agnostic of race or gender opening up job opportunities for all.

4.2 Benefits to the advances in the solution

The benefits below have both direct and indirect impact in South Africa, some of those are:

For the Suppliers

- Greater access to a world market through internet traffic;
- A more efficient payment system;
- Greater volumes being transported;
- Greater empowerment of what to sell, who to sell to and sustainable cash flow;
- More efficient import and export processes;
- Promotion and development of smaller vendors.

For the Purchasers

- Improved security for deliveries from origin to destination;
- Diverse supply chains with a choice of supplier;
- Full audit trails, tracking all the way through the system.

5 Conclusions

Implementing a project of this nature in another country is never easy. No matter how well you think you know a country many new issues emerge and many new lessons are learnt in order to fully understand the social and business environment the Project has to support. Employing local people helped us to appreciate local ways of working and this understanding enabled us to speed up the thought processes of local team members when assimilating new ideas.

The Project Team expected to deliver a single platform localised to South Africa, but instead the team delivered four platforms that reflected the approach of the various suppliers. This approach gave rise to complexities and involved significant change, which added risks to the launch of the new product or service.

The Project Team looked to lay the ground work for future developments by visiting more locations to bring suppliers on board and to expand this remit to other countries (Oman, India) and other regions of South Africa.

IM has also looked to tailor the Hubz system to operate as the suppliers do, so that Hubz leads to increased supplier operational efficiencies. This has been done through early engagement with suppliers in the project process to understand the regulatory constraints and international standards that all couriers and logistical transport companies work to.

It is clear that there are some goods that IM wishes to sell and trade through Alkuto. These are goods that are “one of a kind” which will require some storage to ensure product availability. The storage used will be at IM in-country offices and therefore will not result in any increased costs to Alkuto. With global trade intensifying there is also a need for more effective import and export, which IM believe Hubz could be at the centre of.

The project itself is not about developing or buying a widget and giving rise to some small localised benefit, this project is about creating a new style of ecosystem within South Africa where IM can sustain real growth within the country. Growth will be achieved through gradual expansion and the registration of more and more suppliers and customers that wish to do business in this way. This change will continue to have a positive influence.

6 Next Steps

Detailed next steps form part of the second document submitted by the Project Team – Phase 2. However, in summary the Intrepid Minds team are putting in our own revenue / profits in order to fund the work through the phase known as the ‘valley of death’ when a Project leaves the initial growth and development cycle and attempts to begin to make revenue. Intrepid Minds combined monetary and resource funding for the interim period amounts to £150,000.

As part of the phase 2 document IM has highlighted a number of areas where further financial support would help to develop areas of growth to support the organic growth that we’re seeing from our current work to date. This includes more precision logistics, autonomous deliveries, promoting young regional talent and supporting driver welfare.

The next steps of this project are positive, this is not work that will end up on the shelf or has a finite timeline.

Appendix A: Project Map (Phase 1)

The following illustration identifies the different stages of phase 1

| | |
|---|--|
| <p>October 2018 (Month 1: Set Up)</p> | <ul style="list-style-type: none"> • Hubz UK team assembles to agree the part that each will play in the architecture of the solution. Intrepid Minds becomes a global IoT reseller of Vodafone/Vodacom kit to allow direct sales and control over the hardware. • Intrepid Minds seeks additional consulting specialism in the area of logistics and agrees to work with Theran Govender, a logistics expert from Durban, to support. • Hubz first agreed registrant is UniTrans, a national carrier across South Africa. • Team agrees a single commercial entity headed up by Intrepid Minds |
| <p>November 2018 (Month 2: Design)</p> | <ul style="list-style-type: none"> • Intrepid Minds chooses to have a direct Hubz staff member in South Africa and recruits Theran Govender • A comprehensive analysis of the smaller logistics packaging supports the Hubz method for shipping both nationally and internationally. The model is proven in virtual running trials . • A first round of suppliers for the different logistics are collected and added into tables to be used on the final solution • Local partnerships developed with community leaders around Durban. • Intrepid Minds negotiates with Vodacom in SA the communications. Vodacom in return offers Intrepid Minds access to a broker system to be incorporated into the system • Intrepid Minds secures the brokerage to SA brands Mr Price, Woolworths, Steers, Spar and many others with an annual retail revenue of over £5Bn |
| <p>December 2018 (Month 3: Detailed Design)</p> | <ul style="list-style-type: none"> • Intrepid Minds develops the constructs for an online store. Store to sell natural products through a retail outlet with complete transparency of the origin of the goods from start to delivery. • Completion of the Hubz logo and branding. Holding page for Hubz.biz put onto the internet and back end design completed. • Discussions with suppliers to Alkuto begun, community led from the centre of Durban out to the rural areas surrounding the city • Initial discussions with suppliers from Chromium mines in Rustenburg around logistics. • As a result of requests from local community leaders for a shop front to the products the project expands to include development of the Alkuto.com platform |
| <p>January 2019 (Month 4: Build)</p> | <ul style="list-style-type: none"> • Landing page for Alkuto.com complete, build started for the database behind the site and the content to be included. Data tracking capability through RFID and dynamic barcoding trialled • Following ongoing conversations with communities the expansion of Alkuto is made international through our logistics supply chain • Initial analysis completed by the team into how Hubz could work with people and at different granular levels. Working with those people there is an obvious gap in the network that could be exploited. • Further expansion of the Hubz system is identified for people and companies wishing to sell products and services. Hubz now has three parts Logistics (LG); Market Place (MP) and Services (SV) • Conversations with community leaders create a wider supply chain of raw materials. Intrepid Minds secures supply from major stone, marble and timber suppliers across South Africa |
| <p>February 2019 (Month 5: Test)</p> | <ul style="list-style-type: none"> • Intrepid Minds negotiates a deal with Amazon Web Services for a scalable solution as the service grows • Alkuto content begins to be uploaded for a soft launch in March • Suppliers negotiated throughout Ethikweni province now including animal hides and clothing • Intrepid Minds negotiates potential expansion deal with several Indian companies for stones, marble, silks and clothing • Intrepid Minds negotiates potential expansion deal with several Omani companies for different fuel and oil products • Following conversations with community leaders around Hubz Intrepid Minds begins discussions with South African mines around the transport of precious metals and stones. |
| <p>March 2019 (Month 6: Launch)</p> | <ul style="list-style-type: none"> • <i>Soft launch of Alkuto.com</i> • <i>Soft launch of Hubz LG, MP, SV</i> • <i>Integration with the Vodacom platform</i> • <i>Build user registration base</i> • <i>Expand product and service line up</i> |

Appendix B: Hubz Work Flow

Hubz is a complex platform of data that utilises several different data sets over several databases in order to fulfil its operations. It does this using what is known as relational database tables over a hub and spoke network. This means that data entered into the system, a person's details for example, can be used to populate different roles that the user wishes to perform in the system, for example they can be a buyer, seller, courier etc. Some of these roles require additional details, for example to be a courier you will need to input vehicle details, licencing details etc. In order for the different parts of the system (or spokes as they're called) calling on that data from the hub and populating it. For example, if a buyer wished to transport 1 tonne of goods then the system needs to know that both the driver and vehicle are able to carry that load and so it needs the data in order to do a verification check beforehand.

All of these interrelationships are managed through the Hubz platform and the different services that the platform is able to accommodate all originate from that first user profile. So as an example:



When the user first opens the app (there is also an internet facility for PC's and Laptops, but most users will use the phone or tablet app), the user is faced with this screen. In the future as the other parts of Hubz become available there will be a choice as to which flavour of Hubz the user requires (Logistics, Market Place or Services), in this example the Logistics version is chosen.

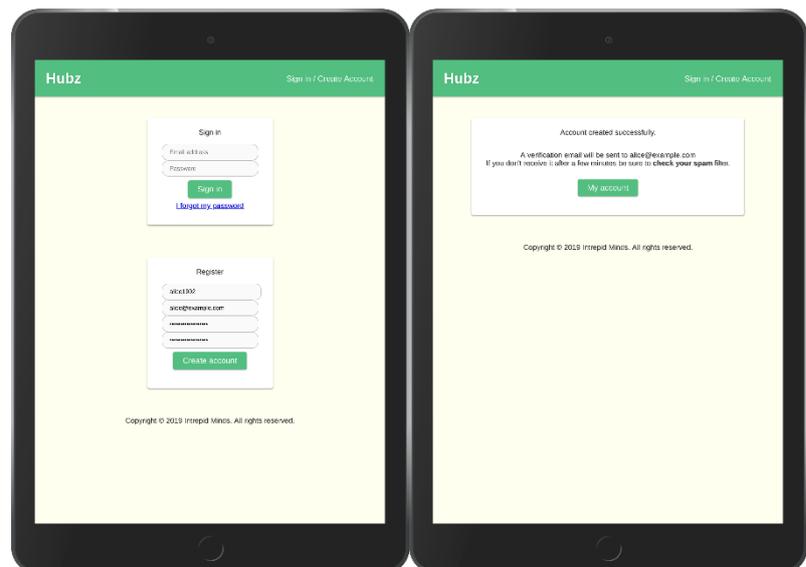
Note the top bar of the app does not show any greeting, the user profile has not yet been created for this individual.

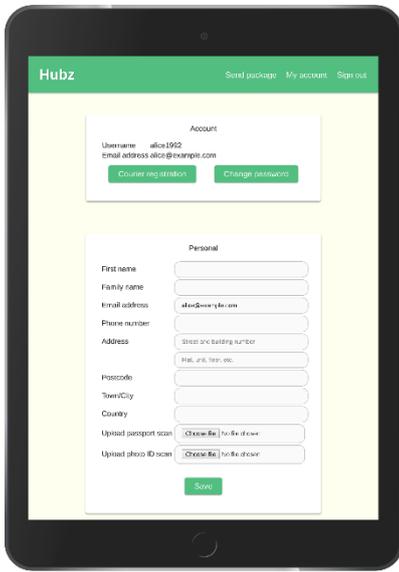
The user has two choices, to log on with an existing username and password or to register. In this example the user first needs to register.

When registering to use Hubz, the first screen asks for basic details, a username, an email address and a password. This creates the basic user profile and the initial lines of data on the database.

Once completed the user will get a confirmation screen on the app and a confirmation email will be sent to their email account.

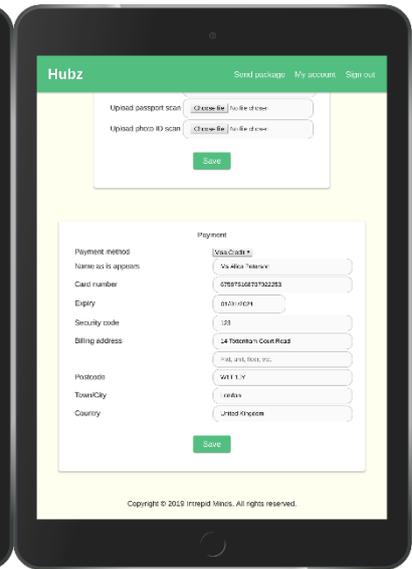
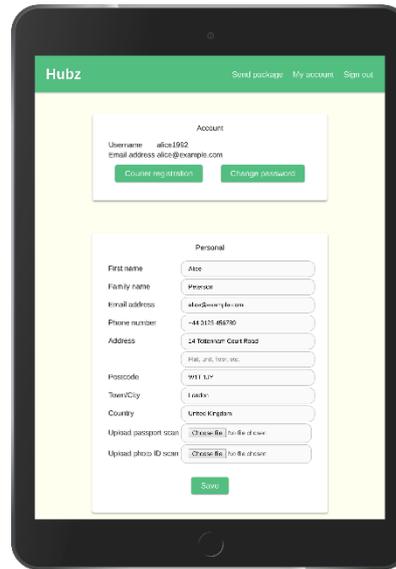
This gives the user confidence that this is a real site and that there are real processes happening in the background, there is an immediate sense of security in the solution.



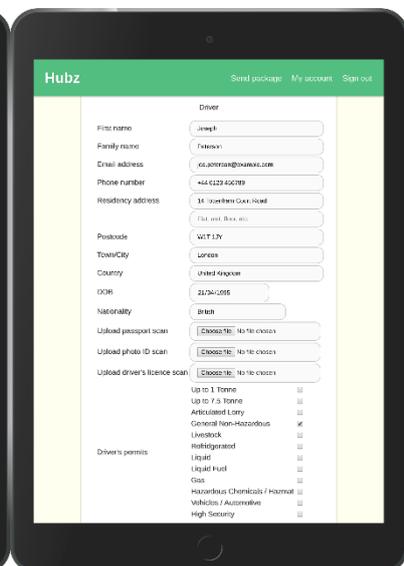
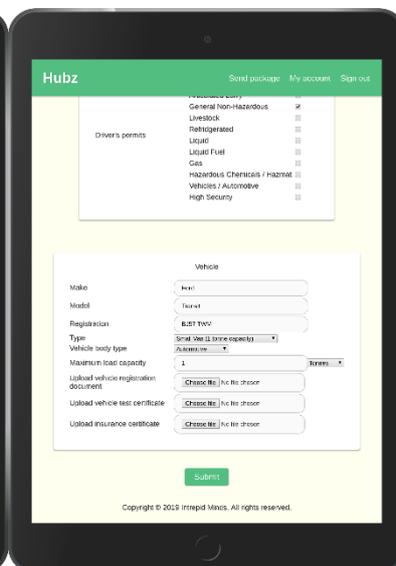


The next stage in the process is to start building the user profile. In this initial form we ask for some static but original information. Much like other countries, security is a real risk with platforms like this and we take the process of vetting the individuals who register very seriously. We found in dealing with companies in South Africa that it wasn't uncommon for requests to be made for attested passports, ID cards, utilities bills etc, especially where a transaction or money was involved. The data entered into the system is checked manually at the moment, however in the near future this will be replaced by digital technology for anti-spoofing.

Examples of completed screens for adding in personal details and financial details. The financial details in this screen are for personal transactions only, another separate page can be accessed to enter company details and financials if more than one user wishes to belong to a group or company. Hubz is looking to try and develop the idea of cooperatives in the future and so with the ability for multiple individuals, couriers or companies clubbing together to form a cooperative they are able to gain benefits by working over this system.



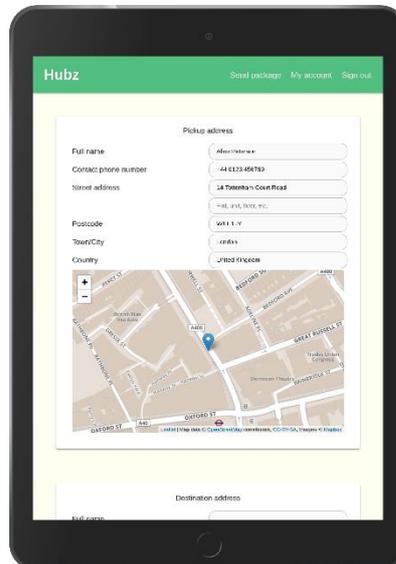
After this point, the user has different screens that they can log onto in order to fill out different types of details which then open up capabilities within the system, you can't look at jobs for couriers for example without registering as a courier yourself. Below are a few examples of some of these screens (L-R; Courier Registration; Driver Registration; Vehicle Registration)



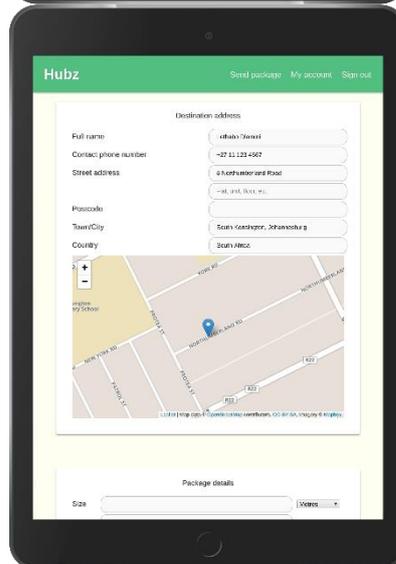


Once complete the user is able to go back to their app at any point and be automatically registered and logged on to all of the services in Hubz they have permission to access.

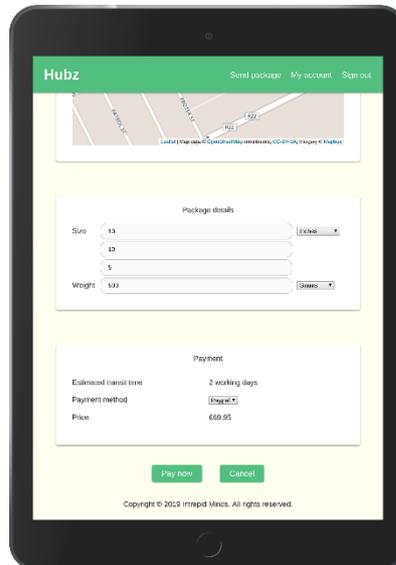
Sending a package is then quite easy, the user chooses the pick-up address



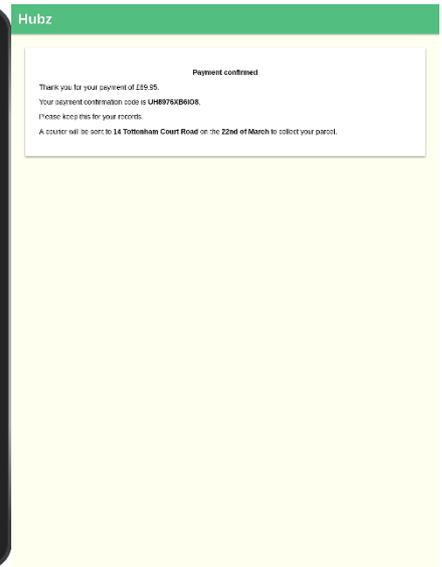
They then choose the destination address



Add in details about the package



and then receives a receipt and a unique identifier that will be linked to its tracking details as well as receive an email to that effect.



The courier receives the details of the package and prints out the way bill complete with 3D barcode. When placing the way bill on the package the courier attaches an RFID sticker to the back of the page (RFID stickers are given to all couriers in initial rolls of 50. At \$0.02 each this doesn't represent a huge investment for Hubz).

The waybill is scanned and then becomes the responsibility of the courier, the courier is then tracked to its next way point where the next courier/transporter scans the barcode or passes the parcel through an active RFID arch which scans the tag (large distributors and logistics companies like DHL and Fed Ex use both methods also as redundancy).

The parcel continues on its journey until it is presented at the destination location where the sender can ask to have it scanned, signed for or proof of identity recorded. A post-delivery questionnaire is then completed.

For larger scale requirements and deliveries involving different types of materials there may be some additional questions asked of the purchaser or seller such as, is there enough space at the delivery location to make the delivery or if the goods will need to be placed in a container (e.g. fuel, sand or precious stones may need special containers), also, for Hubz Market Place certain certifications may need to be uploaded for import such as for hides or materials with chemical properties such as chromium.

Hubz as a system will continuously evolve as the geography widens and the different modes of transport (air, rail, sea, ground) come online, but also as we include a wider range of cargoes.