

# **Major Project Final Report**

Interactive Multimedia Design 2015

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Group 3 • Leo Galway

## 1.0 Acknowledgments

I would like to thank my brother, Paul Wilsdon for his guidance and expertise through the lasting duration of the project. Paul provided much needed clarity through-out the design and branding process, conveying his experience and wisdom from the industry. Paul and I collaborate and run a creative partnership based in Belfast called Flavour, we work with businesses of all sizes offering design and development services for print and the web.

Leo Galway was assigned as my mentor—overseeing the major project from concept to completion. Leo proved to be knowledgeable and passionate about helping his assigned students communicating wisdom and advice at every milestone. In addition to the meetings allocated to groups Leo met with me on various occasions outside of the timetable to address my concerns, I appreciate everything he has done to guide me through the year.

I would like to thank Jamie Robinson, Creative Director of Eyekiller for employing me for a full placement year and for his guidance in the initial concept stages of Propel. I met with Jaime for a consultation and brain storming session in November of the first semester to relay my conceptual mock-ups. Jamie provided me with much needed advice and clarity to which the outcome was to reiterate on my chosen concept.

I would like to thank the following Expression Engine Plugin developers for providing me with free licensing for over \$250.00 worth of software in the name of education: Solspace, Lodewijk Schutte, and Yuri Salimovskiy.

I would like to thank Kerem Suer for his timeless advice and inspirational words. Shortly after the finalized designs where signed off for Propel I approached Kerem via email in search for feedback and only a fortnight later he responded, we spent 30 minutes over skype discussing the project and how to improve upon it. Kerem has always been one of my greatest inspirations and I hope to amass a careers as successful as his.

Finally I would like to thank my girlfriend, Stacey Keays for her constant forward thinking throughout my final year in Interactive Multimedia Design at the University of Ulster. Stacey and I have been together for over 5 years and she has always been the foundation of support in my studies.

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### 3.0 Introduction

Final year of Interactive Multimedia Design entails two modules where students are presented with the opportunity to create a major project that serves as the collation of all aspects learned throughout the undergraduate's degree. Students are set with the task of creating an interactive website or application that solves a specific problem.

### 3.1 Aims

The aim of the major project is to produce a truly outstanding product that has potential commercial ventures and value, positively effect user's lives on a daily basis and promote the undergraduate throughout the industry by relaying their skill-set and style. Students should aim to:

- Solve a specific problem
- Have real commercial value
- Endorse innovative technologies
- Relay the student's skill-set
- Promote the student to potential contacts
- Receive a high grade contributing to their final mark

### 3.2 Objectives

Students should have a clear understanding of what lies ahead over the year and base their successful achievements on objectives. The project should connect with the user on an emotional level, be accessible by way of software and multi-platform. In addition to this scalability should be taken into consideration ensuring the option for extending functionality. Student's should recognize:

- Designing for the moments
- Reaching users with accessibility and by multi-platform
- An extensible and scalable project
- Reach a technical and design equilibrium
- Adhere to BCS project guidelines
- Sound professional practice

This report aims to overview work undertaken from concept to completion in areas such as Definition, design, implementation, testing, evaluation and conclusion. The report will outline all of the milestones and results achieved through-out the development and design of the project.

## 4.0 Concept

An increasing amount of local driven businesses are embracing the web by creating an online presence. Businesses that fully utilize the web can register and commit their identities to services:

- Utilizing social media (Facebook, Twitter, Pinterest, LinkedIn)
- Joining nation wide directories (Yell, Yelp, Merchant Circle)
- Implementing an official dedicated website (Squarespace, web designers, agencies)
- Promoting offers (Gumtree, Groupon)

### 4.1 Why local businesses?

Whilst small local businesses may not generate as much money as large corporations, they are an integral contributor to the strength of local economy. They present employment opportunities and serve as the building blocks to establishing largest corporations.

#### 4.1.1 What defines a small local business?

*“A small business is defined as a business (corporation, limited liability company or proprietorship) with 500 employees or less. According to the Small Business Administration (SBA), small businesses represent 99.7 percent of all employer firms.”*

—John Doe, smallbusiness.com [<http://smallbusiness.chron.com/important-small-businesses-local-economies-5251.html>]

## 4.2 Concept Definition

The Idea for this project is to promote local businesses and skilled experts with the best features from each of these services such as facebook login and sharing functionality, a search-able hand-picked list of featured businesses and an in-depth insight to their business that is easily updated from the user's very own management system.

Propel will be a beautifully designed local directory for skilled experts of a particular craft. Intended for small businesses or craftsman that wish to advertise their unique and trusted services online. Experts can apply for a store front on Propel and once granted they will populate their very own dedicated page, features will include information such as:

- Specialist services offered
- Contact information
- Photos of their work

## 4.2 Concept Definition

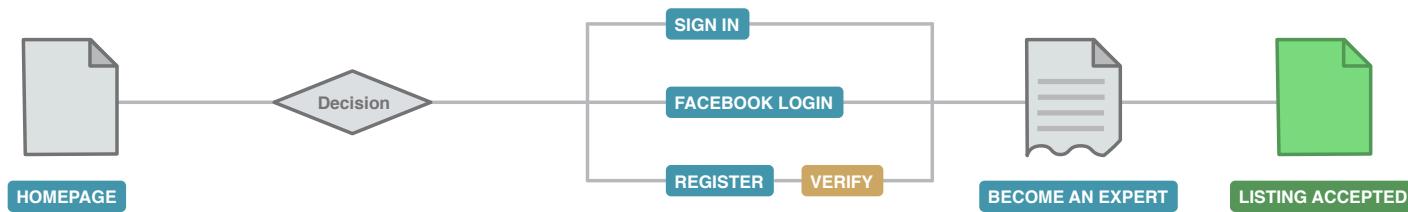
- The story so far
- Deals, offers and packages
- Testimonials and reviews

Propel differentiates itself from mainstream directories by telling the story of local businesses and emphasizing the people at the face of their establishment. This is achieved by an in-depth presentation of their skillsets, expertise and unique selling point that attracts customers. By steering clear of generic lifeless templates, stock photography and market dilution Propel can deliver a sense of caring ideals to promote local business.

To ensure that Propel does not become a saturated directory, businesses will require to create an account or log in with facebook. Registered users will have the ability to 'become an expert' and submit an application that will grant the ability to edit their listing. Being accepted onto Propel is judged by the author(s) of the site (Graham Wilsdon) on the basis of select disciplines to be met:

- Applicants must show unprecedented passion for their craft
- The applicant is expected to provide an excellent service
- Applicants must be local within the area they are applying for (Bangor)

Successful applicants will have their account upgraded from a 'Member' to an 'Expert' allowing them to edit their listing from their specific control panel. Experts will also have the ability to see analytical data of their listing such as page views and reviews.



**[Figure 01: Propel's process for creating a listing starting from the initial visit to be accepted.]**

Propel's intuitive simplicity will allow applicants to change or add content to their listing page in real time. Users who have logged in will have the ability to bookmark listing pages and view them in their own user interface.

## 4.2 Concept Definition

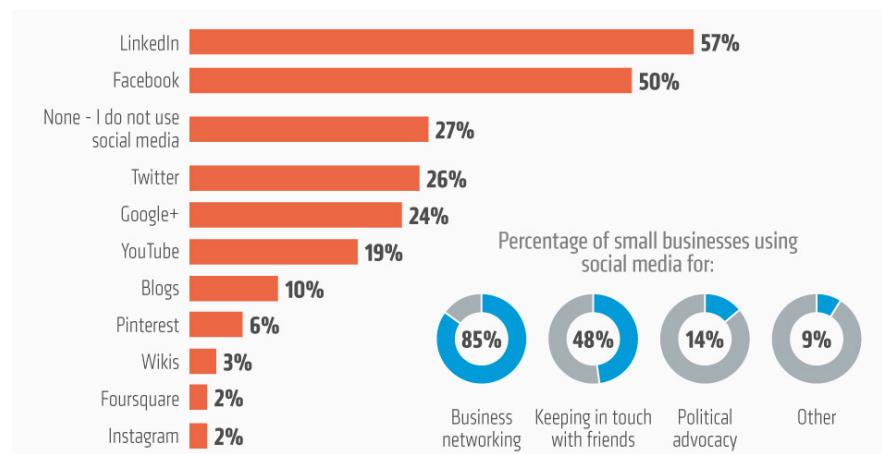
For Propel to attract traffic and applicants it is imperative to have a marketing strategy in place. A frequently updated blog will be introduced early after launch where content is provided by the local business owners. Every week an owner will be chosen by Propel's author(s) to document a expert on their process involved in delivering their product/service—this post can be written up by an author(s) at any time and released to the blog, in addition to this users can opt to join a mailing list.

## 4.3 Thought Process

At the start of 2014 there were an estimated 5.2 million businesses in the UK which employed 25.2 million people, and had a combined turnover of more than £3,500 billion. Small firms accounted for 99.3 per cent of all private sector businesses in the UK, 47.8 per cent of private sector employment and 33.2 per cent of private sector turnover.[\[http://www.fsb.org.uk/stats\]](http://www.fsb.org.uk/stats)

Propel attempts to create a directory of local businesses and tell their story whilst connecting them directly to their customers. For users Propel will be a breathe of fresh air to navigate; without the background noise of 5 star rating systems, over-saturated listing options and generic templates they will become immersed in their content.

Social media sharing and account login functionality will play a role in connecting customers with listings using technologies like open graph. Propel's blog will be a unique selling point for any expert that is chosen to write for it; giving applicants a chance to document their craft and display the meticulous effort involved in creating their product.



[Figure 02: Diagram from statista.com displaying the importance of social media interaction in a small business]

#### 4.4 Anticipated Solution

Experts will benefit from creating a listing by connecting to their customers directly with no middle salesmen in between transactions. Propel's simple editing and adding of content will ensure that users of all technological skill levels will become masters of their listing page and navigating throughout the website.

Users searching the site will have access to the areas(Bangor) most skilled individuals in various industries. Due to Propels simplistic nature users will navigate the site with ease searching, bookmarking and finding their desired results. Enquiring experts will be seamless as they directly email the expert's business for appointments and descriptions of their services—directly putting them in contact with a specialist.

Propel's blog and newsletter will keep users informed of the measures in which experts take to achieve an unprecedeted standard; Experts will drive inspiration from articles by learning from another craft and harnessing social media interactions through Facebook's Open Graph.

#### 4.5 Propel in Context

Propel at it's core, brings together the power of community and marketing to create a digital solution in the form of an indexable portfolio for an entire area. Propel's ideal of quality over quantity allows it to approach a directory like structure in a unique way by presenting people to sell their products/services. With the removal of unregulated inaccurate data listings become meaningless.



---

Pizzas near Bangor, County Down

Serves Area | Distance

Filter all 66 results ▾

Did you mean to search in [Bangor, Gwynedd](#)?

[Figure 03: A view of Yell.com's total results for searching Pizza in Bangor showing the saturation of listings]

Propel's application process will ensure that indexed industries will not become over saturated and return a barrage of results where 'bottom of the pile' services are unfound. Search results on Propel will be much more confined as it only filters through an area at a time as opposed to a radius of

#### 4.5 Propel in Context

Listing content management for individuals will be seamless harnessing inline editing and live submissions to the system. Granting privileges to the expert user group will give successful applicants the ability to change or add anything on their listing page at any time without having to contact the directory authors.

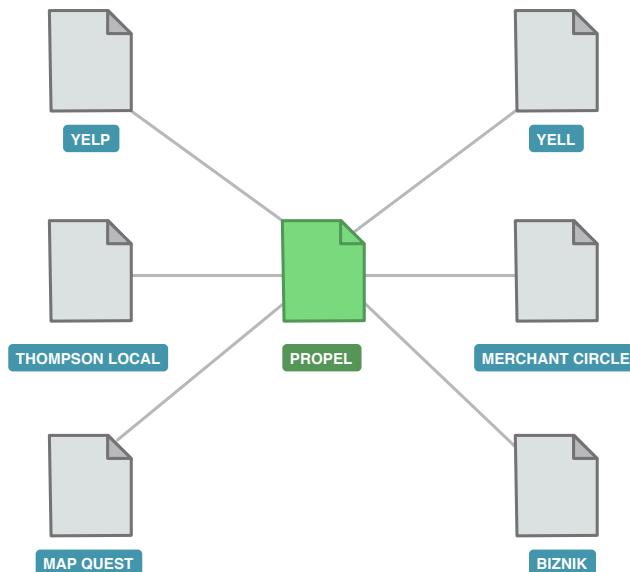
*“It’s easy for web projects to unearth myriad business process or communications gaps. If you don’t have a complete view of the landscape going in, you will end up fixating on something valuable, but tangential—a worthy problem to solve, but a distraction from your current mission.”*

—Perry Hewitt, Mastering Digital Project Momentum. [ONLINE] Available at: <http://alistapart.com/article/mastering-digital-project-momentum>. [Accessed 11 October 14].

A list apart’s post on mastering digital project momentum by Perry Hewitt details how a complete overview enlists you to face the overall solution to the clients problem.

#### 4.5 Similar Solutions

Online directories are widely distributed through out the web—directories are an over arching term for many types of websites, an example of this would be the difference between Gumtree.com(used for classified ad) and Ebay(the world’s online marketplace).



[Figure 04: A competitor awareness graph displaying other directory services targeted at local commerce]

#### **4.5.1 Yell.com**

Yell.com is the leading UK directory for online businesses and offline consumers. Yell.com provides users a range of digital products and services that allows them to advertise their business online. Whilst Yell.com is a holistic solution to advertising online it is an inaccurate and saturated database of generic results for users of the site due to its size and popularity. The site functions as a direct means of contact as opposed to learning about the experts and businesses in a user's local area.

#### **4.5.2 MapQuest**

MapQuest utilities geolocation mapping to document and list the businesses in an area and lets users filter them by the services they provide. MapQuest is simplistic in nature and allows users to bookmark their favorite listings for future use. Like Yell.com MapQuest serves only as a means of contact leaving out the details of business, this can often feel like a glorified google maps alteration.

#### **4.5.3 Yelp**

Yelp is a review based directory that connects a community together and drives commerce to local businesses. Yelp builds upon Yell.com's weaknesses such as lack of activity, community driven, more in-depth, review based, meaningful results and user input. Yelp can often feel over crowded with features and seemingly tries to solve many problems sub-par instead of a few well.

### **4.6 Objectives**

Propel's requires a search feature that allows users to filter through listings by way of keywords and categories. Experts will have the inherit ability to edit their listing at any time within their account section. As an Expert users at any time can see their listings stats that entail: page views, how many times has it been bookmarked and a total reviews count. Experts will have the ability to post a pending entry to the blog and edit it at any time. Users that come to the site will have the option of logging in with facebook, signing in or registering an account with Propel. Members can review a listing and edit these at any given time.

### **4.7 Aim**

Propel's aim is to ultimately connect customers to local businesses and promote their specialist services across a community. Further aspirations are to share knowledge, allow business owners to build upon their online Identity and allow users to find services in their area.

## 4.8 Scope

Due to the nature of this project it's advised to follow a modular approach meeting deadline.

Throughout the project there will be various costs associated with :

- Expression Engine Commercial License: £189.04(Single)
- Expression Engine Plug ins(Commercial licenses)
- Reseller Hosting via simpehosting.org.uk (Unix server): £101.18(Annually)
- Connection to a mySQL database (included in hosting package)
- A Font Delivery Network, Fonts.com/cloud.typography.com/typekit.com (Monthly)
- .com Domain : £8.99(Annually)

Building Propel will require a number of tools in which will be involved through-out:

- CC Adobe Photoshop (Mock-ups & Design)
- CC Adobe Illustrator (Icons, Branding)
- OmniGraffle (Wire-framing, high-fi/low-fi mockups)
- PrePros
- Sublime text + Package Manager
- IcoMoon
- Cyberduck
- MAMP Pro(Local Server Environment)
- SourceTree
- PHPmyadmin

## 4.9 Planning & Methodology

Preemptive planning on a project of this scale will always yield positive benefits ensuring for a clean concept and build. Taking a high level approach will allow us to complete milestones in a top down fashion. The duration of this project can be broken down into five stages; concept, branding, design, development and quality control.

**Concept:** The concept phase will envelop the beginning phases of placing the project in context.

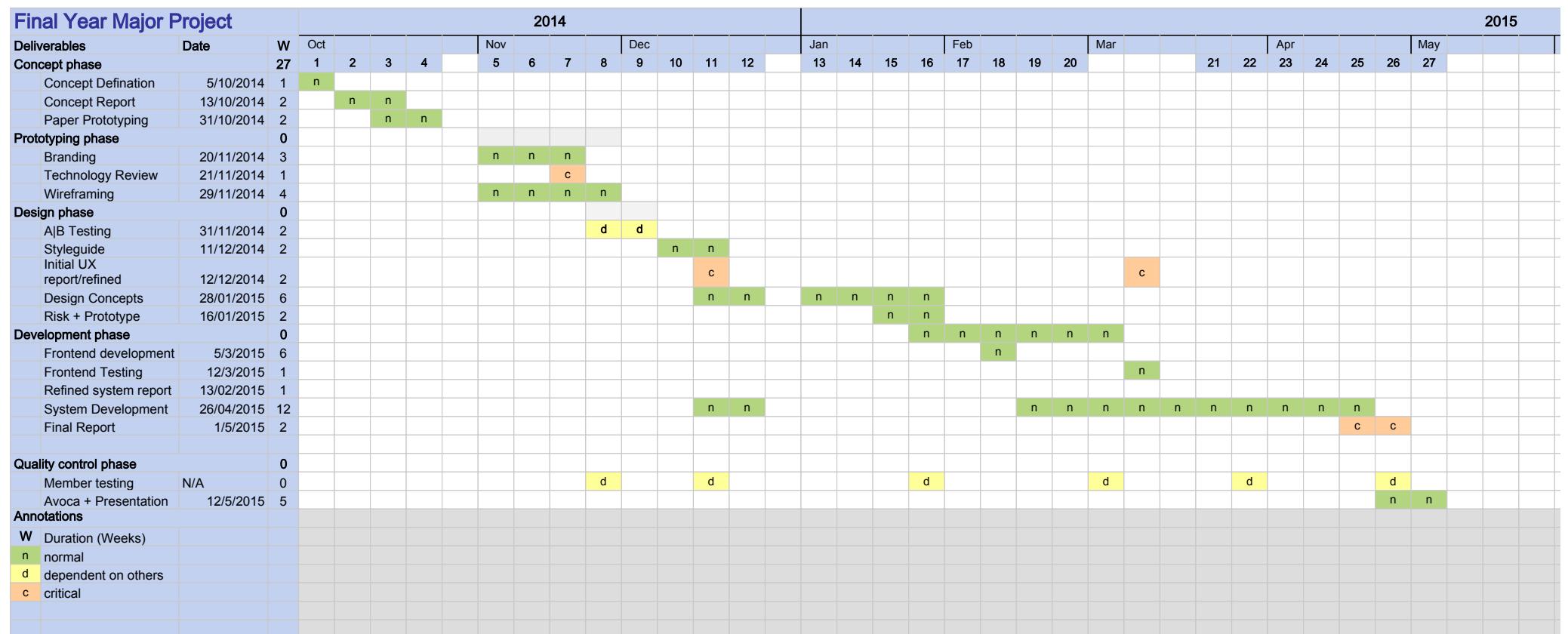
*Completion date: 13/10/14*

**Design:** The design phase will include branding, prototyping, wire-framing(ux), styleguide, design.

*Completion date: 25/01/15*

**Development:** This encompasses the entirety of conceiving the system to implementing/testing it.

*Completion date: 15/04/15*

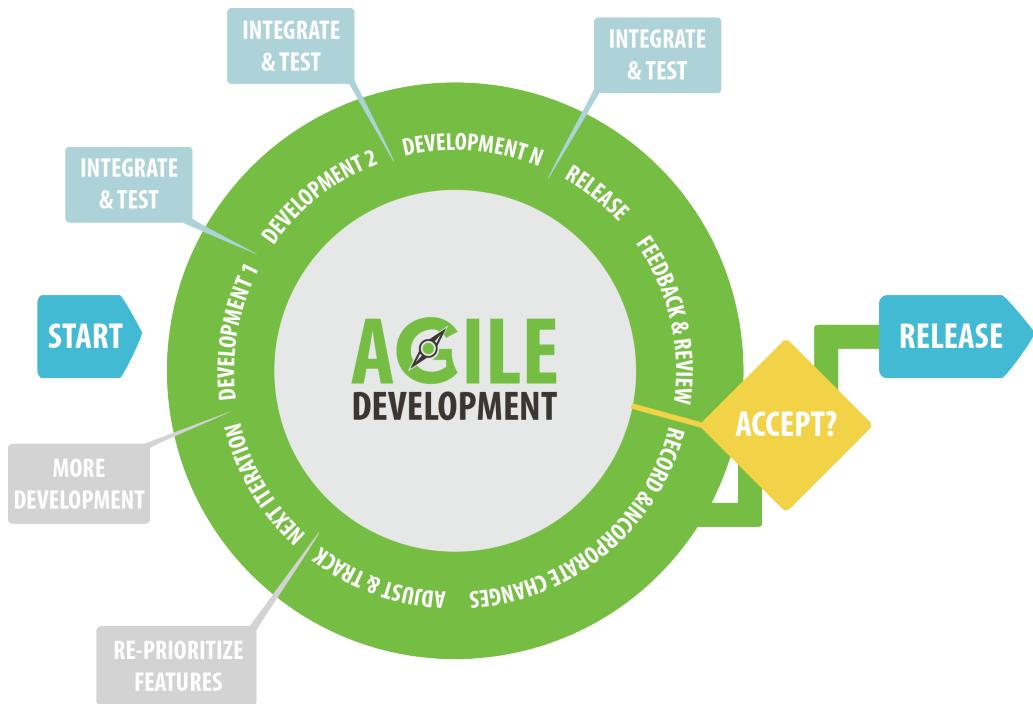


**[Figure 05:** A Gant chart representing the schedule for meeting deadlines and milestones through out the years work on Propel]

#### 4.9.1 Agile Methodology

Agile methodology proposes an alternative to traditional project management. Agile approaches are typically used in software development to help agencies combat unpredictability and instill an iteration process to features. Agile is regarded as a variant of an iterative life cycle where by deliverables are submitted in stages as opposed to a final submission.

The key difference between agile and methods like waterfall is that the later completes small portions of deliverables in each iteration of a feature.



[Figure 06: A diagram from solutionguidance.com documenting the process of agile development]

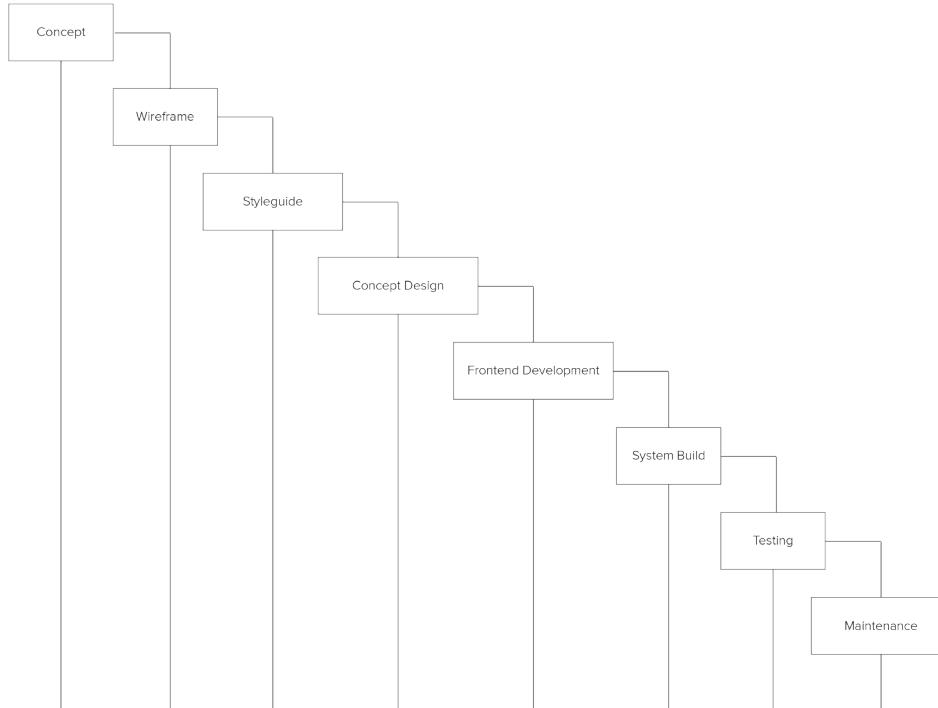
#### 4.9.2 Scrum

“The Scrum is the most popular way of introducing Agility due to its simplicity and flexibility. Because of this popularity. Scrum emphasizes empirical feedback, team self management, and striving to build properly tested product increments within short iterations. Doing Scrum as it’s actually defined usually comes into conflict with existing habits at established non-Agile organizations. Scrum has only three roles: Product Owner, Team, and Scrum Master. These are described in detail by the Scrum Training Series. The responsibilities of the traditional project manager role are split up among these three Scrum roles. Scrum has five meetings: Backlog Grooming (aka Backlog Refinement),

#### 4.9.2 Scrum

Sprint Planning, Daily Scrum (aka 15-minute standup), the Sprint Review Meeting, and the Sprint Retrospective Meeting.”[<http://agilemethodology.org/>]

The developer(Graham Wilsdon) will be assuming all three roles of the scrum methodology and also take on the additional role of the client.



[Figure 07: A diagram displaying Propel’s specific agile methodology working towards the deadline]

#### 4.9.3 Why Agile?

The Agile methodology provides the developer with the opportunity to assess the direction throughout the build life-cycle. This is achieved through regular iterations of features known as sprints at the end of which will become a well tested implementation.

“By focusing on the repetition of abbreviated work cycles as well as the functional product they yield, agile methodology is described as “iterative” and “incremental.” In waterfall, development teams only have one chance to get each aspect of a project right. In an agile paradigm, every aspect of development, requirements, design, etc is continually revisited.”[<http://agilemethodology.org/>]

## 5.0 Design

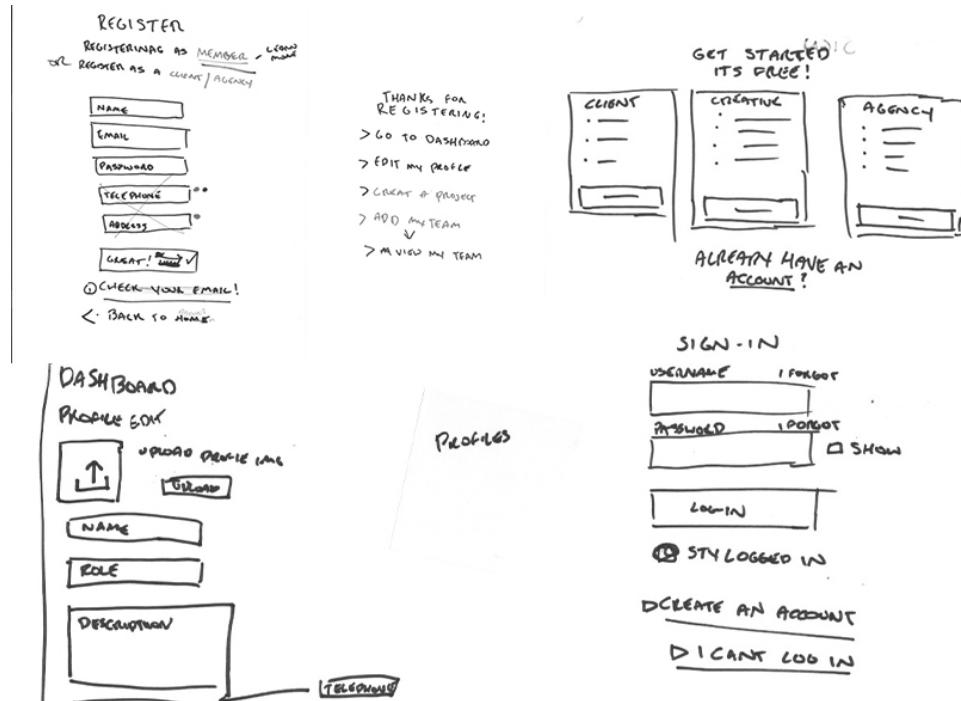
The purpose of this section is to outline all aspects of the system and interface design ranging from initial low-fi wireframes to integral functional requirements. A detailed analysis of both interface and system design that encompasses the entirety of Propel will elicit the required technologies to meet the needs of it's users.

### 5.1 Interface Design

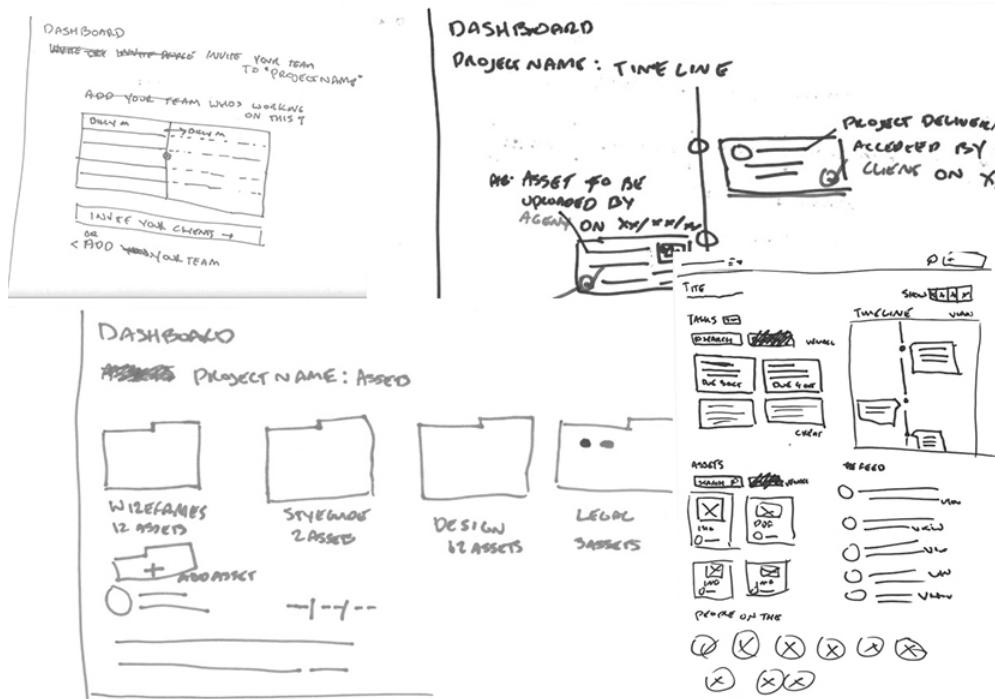
Propel aims to deliver a solution against generic directories that have a faceless appearance by carefully typesetting and structuring uploaded content. Imagery will communicate a distinctive voice that will convey a genuine and believable story. An adoption of an atomic design approach will provide clarity in the process for tailoring visual concept complexity to Propel.

#### 5.1.1 Paper Prototyping

Wireframing begins with super-low-fi concepts with the intention of beginning to construct the initial layout and allow for testing to begin at early stages. These initial wireframes are not indicative of the final product and are only for conceptual purposes.

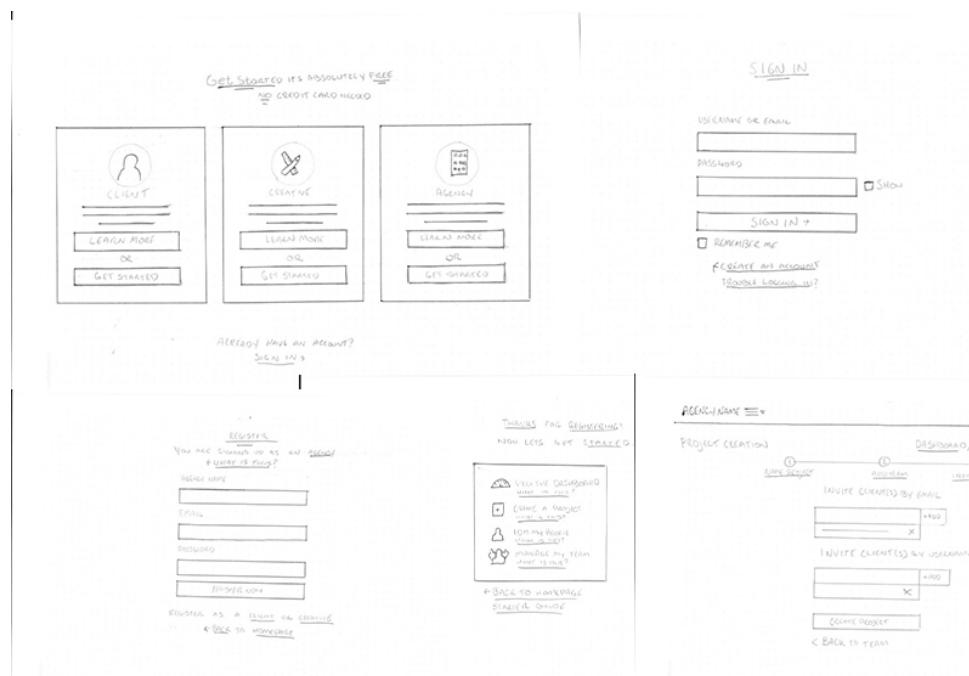


[Figure 14: A collaboration of the account functionality in super low-fi wireframe format]

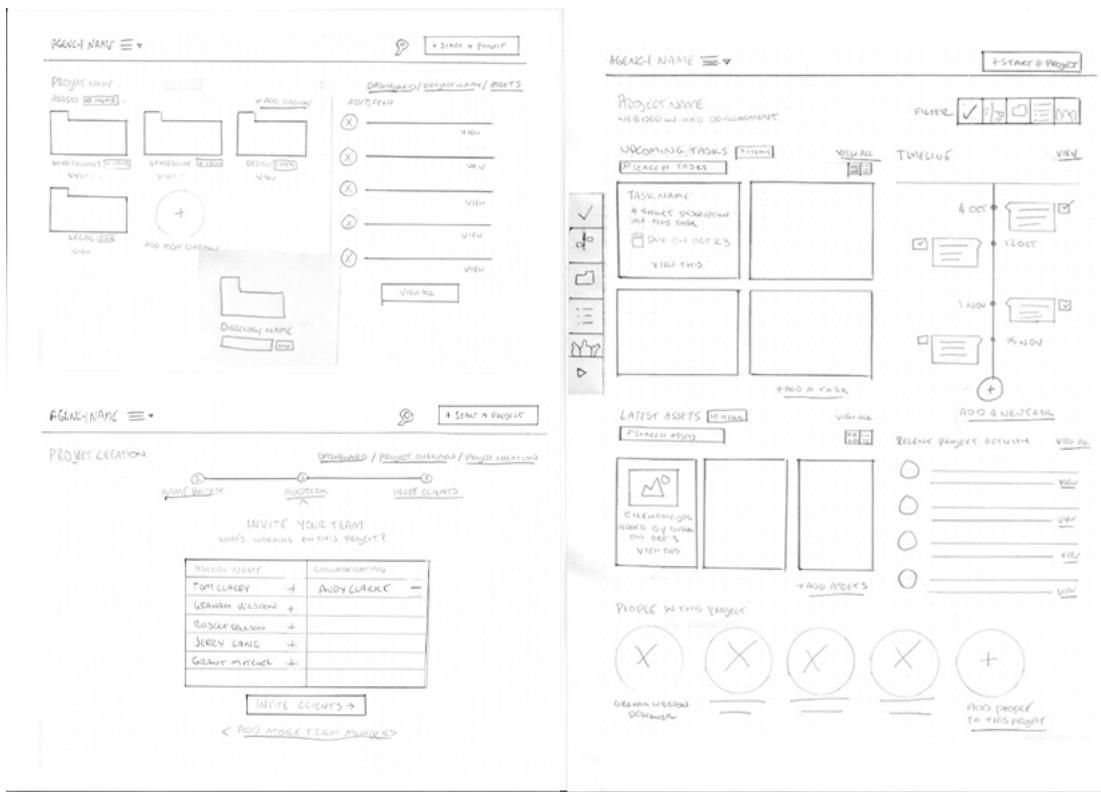


[Figure 15: A collaboration of site wide functionality in super low-fi wireframe format]

With the basis of a structured layout documented the designer can begin move into a slightly higher fidelity, although still considered as low-fi wireframes.



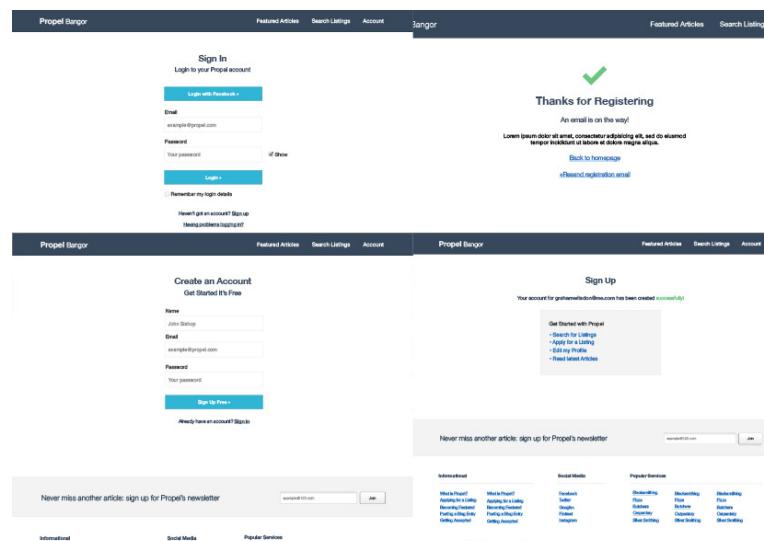
[Figure 16: A collaboration of the account functionality in super low-fi wireframe format]



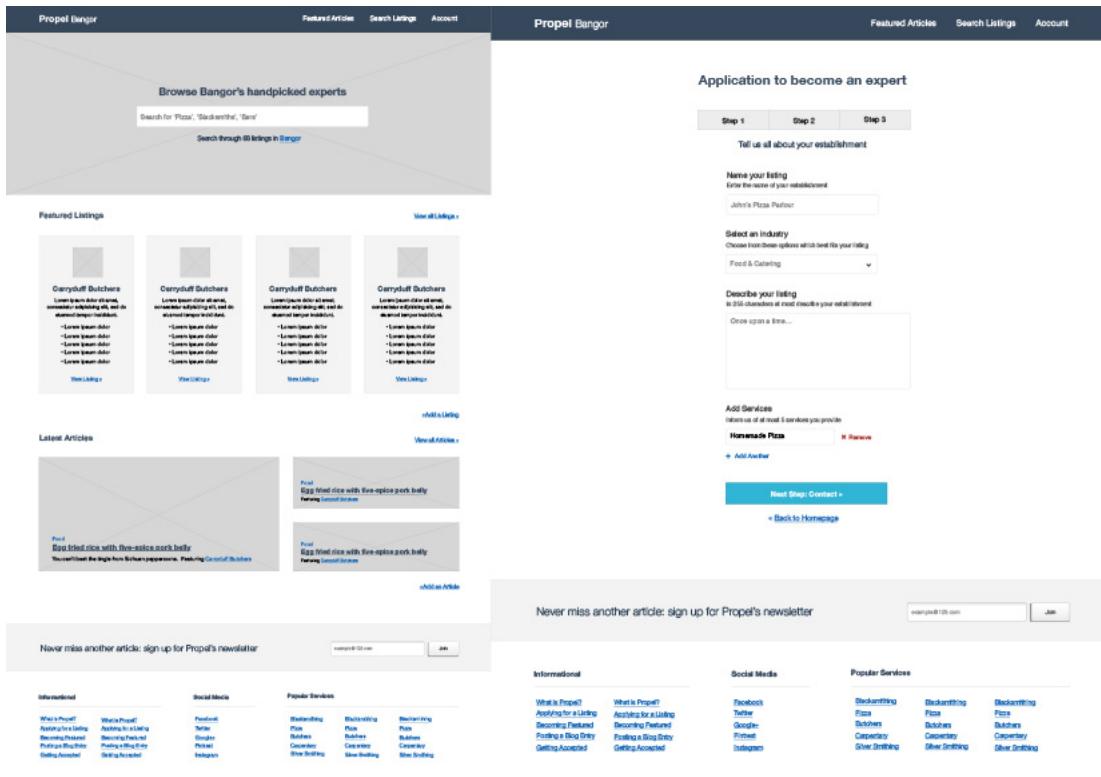
[Figure 17: A collaboration of the account functionality in super low-fi wireframe format]

### 5.1.2 Digital Wireframing

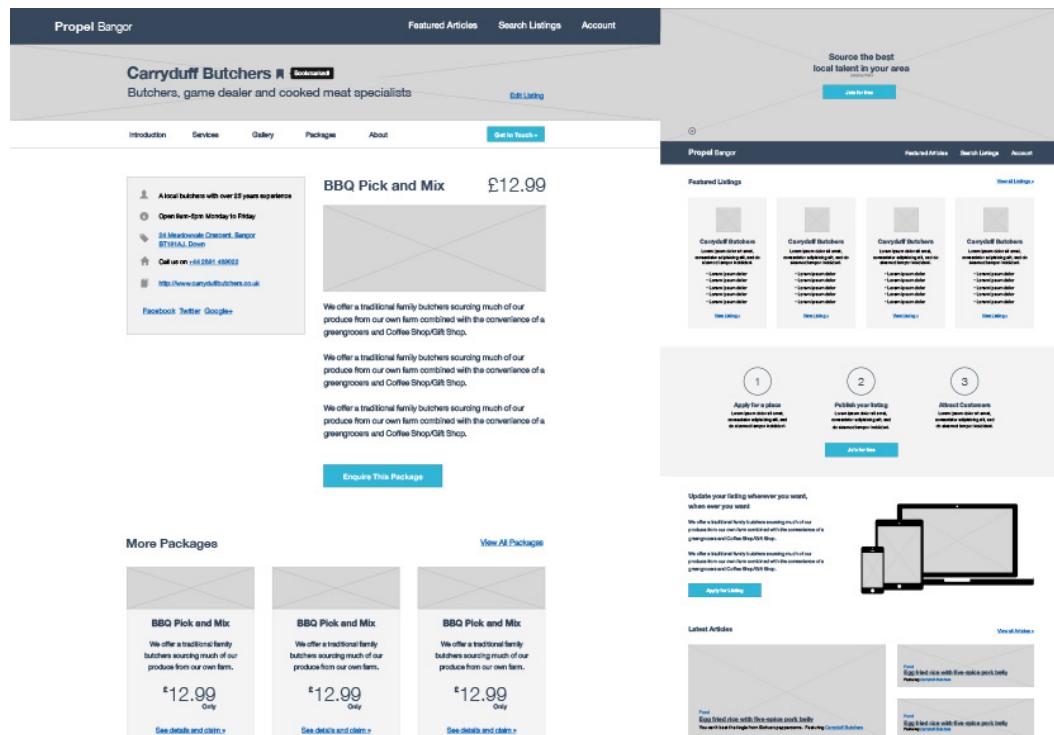
With the low fidelity wireframe constructed a higher level of concepts can begin to be designed. These wireframes will focus on a refined view of user experience and take influence from interaction.



[Figure 18: A collaboration of the login functionality in high-fi wireframe format]



[Figure 19: A collaboration of the homepage and become an expert pages in high-fi wireframe format]



[Figure 19: A collaboration of a specific page and the homepage in high-fi wireframe format]

### 5.1.3 User Persona

As Propel is a community driven website research was conducted to fully understand the average ‘expert’. Two interviews were carried out with Clark Martin of C&R Interiors and Kenny Crossen of J McDonald Florists, both of which are local business owners. These interviews entailed their needs and wants from a digital product aside from their own social media and websites as local business owners. Through brief interviews the designer was able to construct an average user persona for Propel.

**Sean, Butcher and Propel Expert**

**Background**  
Sean is a 38 year old Butcher that runs his own shop. Sean works Monday to Saturday in his butchers and has little time for marketing. On his day off he ties any loose ends, offers they are promoting and any customer enquiries or requests.

**Relationship with local area and Propel**  
Sean knows the difficulties of promoting his small local business himself against large corporations like Tescos and Asda. Sean uses marketing to help attract customers and let locals know where he operates from. Sean uses Propel to market his services and share his latest deals on social media and his own website.

**Seans's Journey**

Propel Homepage > Organic Sign In > My Account > Edit my Listing > Found Listing

[Figure 19: An example user persona based on results from interviews for Propel’s Experts]

## 5.1.4 User Communication

Content hierarchy is an integral factor for Propel as it has much information to communicate to the user. This is visualized by sections and strategized to cater for the user allowing for viewing clarity.

**Key Marketing Area**  
Main banner image, Title, Description, Bookmark, Edit Listing

**Lead Directory Information**  
Paramount Detail Breakdown, Social Media, Introductive Text

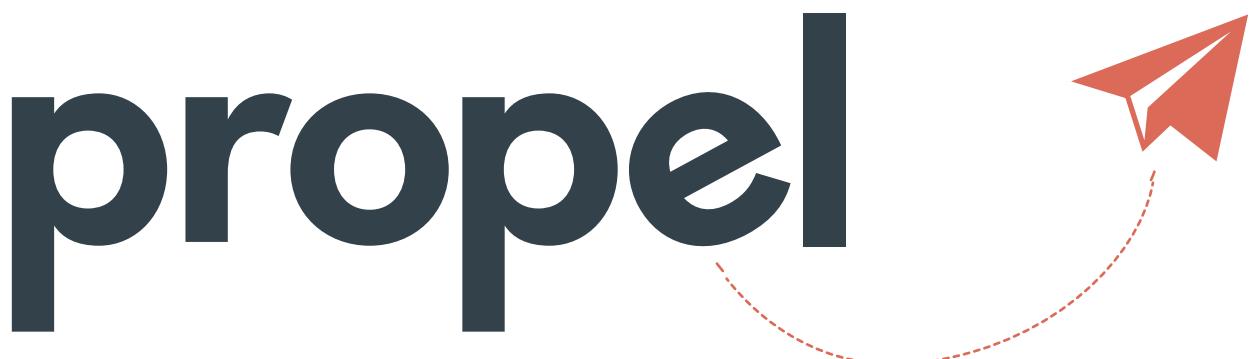
**Marketing and Promotions**  
Service List, Immersive Gallery, Package deals

**High Love/Respect Loyalty**  
Indepth Description, Testimonials and Staff List

[Figure 19: A view of the communication flow in a propel specific page labeling each section by its intention]

### 5.1.4 Branding

Propel's brand was based on keeping simplicity and remaining legible regardless of orientation. The brand has been typeset in Avenir and kerned accordingly to stop overlapping letters furthering legibility. The turn on the 'e' allows for the motif to 'swoosh' into a direction that regulates the entire width. The addition of a motif adds versatility and balances out the brand complimenting the quirky nature. The colour choices were based on a pallet previously chosen for the styleguide ensuring consistency.



[Figure 20: Propel's brand at full size, displaying in full colour with motif included]



[Figure 21: Examples of Propel's brand usage via print mediums in mockups]

## 5.1.5 Website Design

With the ground work accomplished for user experience and branding the addition of a styleguide will connect this loop and allow Propel to amass design equity. Full concepts can be found at <http://talktoflavour.com/propel/concept/index.html> or **11.0 Appendix**

## 5.1.5 Styleguide

**01 Colours**

|                       |                       |                      |                       |                          |                         |                          |                     |
|-----------------------|-----------------------|----------------------|-----------------------|--------------------------|-------------------------|--------------------------|---------------------|
| Light Grey<br>#EAEAEA | Light Blue<br>#AED7F0 | Rich Blue<br>#00B2C9 | Tan Yellow<br>#ECC931 | Light Emerald<br>#33CC66 | Rich Emerald<br>#00A956 | Dark Charcoal<br>#3C404D | Ruby Red<br>#D06951 |
|-----------------------|-----------------------|----------------------|-----------------------|--------------------------|-------------------------|--------------------------|---------------------|

**02 Typography**

**Heading One:** Avenir Next Bold 44px

**Heading Two:** Avenir Next Bold 36px

**Heading Three:** Avenir Next Light 30px

**Heading Four:** Avenir Next Bold 24px

**Body**

Every time a **gaming website** downsizes, every time a bean-counter closes a home to **gaming journalism**, we all lose a little. Joystiq's closure is by no means the first of its kind; news of sites shutting down, downsizing, staff moving have been at a steady beat for years now.

But this particular closure is important. **Important, perhaps** if only because it is a good time to reflect on just how far game journalism has come. In 2004, the landscape of gaming websites was mostly monopolized by large, corporate-owned entities.

- Share: Quickly Create New Pages & Posts
- Engage: Quickly Create New Pages & Posts
- Motivate: Quickly Create New Pages & Posts
- Improve: Quickly Create New Pages & Posts
- Justify: Quickly Create New Pages & Posts

1. Share: Quickly Create New Pages & Posts

2. Engage: Quickly Create New Pages & Posts

3. Motivate: Quickly Create New Pages & Posts

4. Improve: Quickly Create New Pages & Posts

5. Justify: Quickly Create New Pages & Posts

**03 Buttons**

**Singles**

|        |        |        |        |
|--------|--------|--------|--------|
| Normal | Normal | Normal | Normal |
| Hover  | Hover  | Hover  | Hover  |

**Functional**

|   |   |  |
|---|---|--|
| <input checked="" type="checkbox"/> Edit my Listing | <input checked="" type="checkbox"/> Post my Listing | <input checked="" type="checkbox"/> Delete Listing |
| <input checked="" type="checkbox"/> Edit my Listing | <input checked="" type="checkbox"/> Post my Listing | <input checked="" type="checkbox"/> Delete Listing |

**Miscellaneous**

|                                     |                      |                     |                          |                         |
|-------------------------------------|----------------------|---------------------|--------------------------|-------------------------|
| <a href="#">Login with Facebook</a> | <a href="#">Like</a> | <a href="#">ON</a>  | <a href="#">Bookmark</a> | <a href="#">Saved</a>   |
| <a href="#">Login with Facebook</a> | <a href="#">Like</a> | <a href="#">OFF</a> | <a href="#">Bookmark</a> | <a href="#">Remove?</a> |

**05 User Interface**

**Listings Widgets**

**Carnduff Butcher & Co**  
Butchers, game dealer and cooked meat specialists.

✓ Over 15 years of experience  
✓ 100% Beef farmed Ingredients  
✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)

**Carnduff Butcher & Co**  
Butchers, game dealer and cooked meat specialists.

✓ Over 15 years of experience  
✓ 100% Beef farmed Ingredients  
✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

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**Carnduff Butcher & Co**  
Butchers, game dealer and cooked meat specialists.

✓ Over 15 years of experience  
✓ 100% Beef farmed Ingredients  
✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)

**Blog Widgets**

**Competition style ribs right in your backgarden**

June 13, 2015 | 12 Comments

It's early in the grilling season, but that doesn't mean we can't start having some fun on the Weber Smokey Barbeque straight in the door...

[Read Article Post](#)

**Competition style ribs right in your backgarden**

June 13, 2015 | 12 Comments

It's early in the grilling season, but that doesn't mean we can't start having some fun on the Weber Smokey Barbeque straight in the door...

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**Competition style ribs right in your backgarden**

June 13, 2015 | 12 Comments

It's early in the grilling season, but that doesn't mean we can't start having some fun on the Weber Smokey Barbeque straight in the door...

[Read Article Post](#)

**Mac Interactions**

Search for Pizza, Blacksmiths, Photographers

Your listing is now **pending** and you will be notified soon.

Warning: You haven't entered any services yet.

Error: There was a problem with your submission.

Success: There was a problem with your submission.

Tab One

Tab Two

Tab Three

[Figure 22: Propel's comprehensive styleguide displaying each of the elements of the site in a single document]

## 5.1.6 In-page Concepts

Whilst styleguides visualize how elements will display they do not depict the final style of the site. Applying those styles to a high-fi wireframe provides a fully fledged concept for each page.

The image shows the Propel homepage. At the top, there's a navigation bar with links for 'Search Listings', 'Latest Articles', 'Become an Expert', and a user profile for 'Graham Dragonborn Wilson'. Below the navigation is a large banner with the text 'Find handpicked experts in your area' and a subtext 'We believe that the best service you will ever receive comes from people who love what they do.' A 'Join for Free' button is visible. The main content area features 'Featured Listings' for 'Carduff Butcher & Co' (repeated four times) and a 'Become an Expert' section with three steps: 'Apply for a Listing', 'Publish your Business', and 'Attract Customers'. Each listing includes a profile picture, business name, description, experience, ingredients, reviews, and a 'View Listing Profile' button. On the right side, there's a search results page for 'Butchers' with 24 results, each showing a profile picture, business name, description, experience, ingredients, reviews, and a 'View Listing Profile' button. The bottom right corner has a newsletter sign-up form.

[Figure 23: A side by side view of propel's Homepage and Search Listing pages]

The most integral section of Propel is its specific listing feature, afterall it is the purpose of why people are attracted to the site. In addition to designing the front facing listing the designer mocked up what the editing process would feature as also.

**Propel Listing Page (Left):**

- Header:** propel logo, Search Listings, Latest Articles, Become an Expert.
- Profile:** Graham Dragonborn Wilson, profile picture, business name, 'Butchers, game dealer and cooked meat specialists.'
- Specialties Include:** A list of services offered, such as Packing & moving helpers, Real estate showing preparation, Organizing Estate Sales, etc.
- Contact Information:** Address: 19 Conway Square Newtowntown, BT190AJ, Telephone: +44 (0) 28 9181 2169, Opening Hours: 9am—5pm Monday to Friday, Website: http://www.carnduffbutchersards.co.uk, Facebook: Visit Facebook Page.
- Call-to-Action:** Get in touch, Or View our Offers.
- Image:** A large image of a butcher's hands expertly slicing meat on a wooden board.
- Text:** A local family run butchers with over 30 years experience.
- Offer Section:** Special Offers for BBQ Pick and Mix at £24.99 each, with Enquire Offer buttons.
- Customer Reviews:** Read 31 Reviews about Carnduff Butchers & Co.

**Propel Edit Listing Page (Right):**

- Header:** propel logo, Search Listings, Latest Articles, Become an Expert.
- Title:** Editing Listing: Carnduff Butchers & Co
- Form Fields:**
  - Your Listing:** Choose a Listing Name (Baron's Pizza Parlour), Upload a Profile Photo, Enter a Tagline, Add Services.
  - Contact Information:** Business Address, Telephone Number, Opening hours, Email Address, Business Website, Facebook Page.
  - Gallery:** Gallery Images, About Text.
  - Offers & Testimonials:** Enter Testimonials, Add Offers.
- Omega Grid:** Add up to 4 of your offers or deals, with fields for Title, Price, Photo, Description.
- Buttons:** Save Listing.

[Figure 24: A side by side view of propel's Listing specific and Edit pages]

## 5.2 Candidate Technologies

Propel will be a web based application that will require a server for it to be hosted on and a domain pointed to the server's IP. The server admin will require all access and full privileges as assets and files will be uploaded to the server; In addition to this the admin will also require the ability to edit hidden files such as the .htaccess.

Due to Propel's requirement of being a web based application certain technologies will be much better suited than others; Technologies will be broken down into three sections; front-end, server-side and external sources.

### 5.2.1 Front End Candidates

**HTML5:** A markup language for structuring and presenting content Online. HTML5 is the latest installment with new features such as a semantic markup, APIs, off line version and error handling.

**CSS3:** A style sheet language that allows users to change the appearance of HTML elements. CSS3 is the latest proposed standard that adds animation and other styling options.

**LESS or SASS:** A CSS Preprocessor that extends CSS allowing for variables, mixins, functions with scalable traits.

**jQuery:** An easy to use JavaScript library that allows for DOM manipulation, event handling, CSS like syntax, and Ajax.

**XML:** An expendable markup language for carrying and describing data with semantic intentions.

**XSL:** An expendable style-sheet language used for styling, transforming and navigating XML.

**JSON:** A JavaScript object notation that is a syntax for storing and exchanging data.

**Angular.js:** A JavaScript framework that extends HTML for application development.

**Ember.js:** Also a JavaScript framework that extends HTML for application development that incorporates other frameworks like handlebars into it's base install.

### 5.2.2 Server Side Candidates

**PHP:** a general purpose scripting language that is suited for server side web development.

**Ruby:** an open source programming language with a focus on simplicity and natural syntax.

**Python:** is a general purpose and high level programming language that focus on readability.

**MYSQL:** is the world's most popular open source database widely used Online.

**Microsoft Access:** Microsoft's answer to Online database and content administration.

### 5.2.3 Content Management Systems

**Wordpress:** is the most popular CMS powering over 20% of the web, originally a blog but has not evolved into an extendable platform through thousands of plugins and themes.

**Expression Engine:** A popular CMS that was built for the purpose of extendability on an open source foundation with power and flexibility.

**Craft:** Is a relatively new CMS from Expression engine plugin developers Pixel and Tonic that uses the Twig templating language.

### 5.2.4 Technologies Comparison

To ensure that Propel's build is the best it can be, the comparison and evaluation of their suitability for the project must be decided. Ensuring that the most suitable technologies are chosen for this project is paramount.

### 5.2.5 Front-end Comparisons

**HTML vs XSL:** The main difference between HTML and XML is semantic pursuits; HTML focus on presentation and the later on content.

**Angular.js vs Ember.js:** Both Angular and Ember are MV\* frameworks for web applications written in JavaScript. Both frameworks are designed for scalability and are extensions of HTML that allow for dynamic markup. Although each have the same intentions Angular and Ember have entirely different methodologies that perform separately on specific projects.

"Angular adopts emphasis on separation of concerns, unit isolation and provides ready-to-use, powerful mocks for fundamental built-in services and is written with testability in mind. Ember.js favors Convention over Configuration. This means that instead of writing a lot of boilerplate code, Ember can automatically infer much of the configuration itself, such as automatically determining the name of the route and the controller when defining a router resource." [<https://www.airpair.com/js/javascript-framework-comparison>]

### 5.2.6 Server Side Comparisons

**PHP vs Ruby vs Python:** "Just as the Japanese, Spanish and French languages are uniquely different, programming languages also have their variations, some more popular and easier to use than others." Whilst PHP is a web based standard both Python and Ruby can be used as alternatives.

**MYSQL vs MS Access:** Both databases can be used for web applications and have separate-

### 5.2.6 Server Side Comparisons

-properties for data; It should be noted that MS access requires the use of .net to run Online where as MYSQL can be run with PHP and is the base of many CMS' where they pull data from.

### 5.2.7 Content Management System Comparisons

**Wordpress vs EE/Craft:** Each CMS has a separate basis on how they approach content; Wordpress having its ease of use blog-like capabilities and large backing is always a forward thinking approach; Expression Engine comes with many already built in features and doesn't require as much customisation out of the box. Craft is a fresh CMS that has built upon the mistakes others have made and utilises modern standards with a ever growing community of developers.

**Expression Engine vs Craft:** Both Craft and EE have very similar concepts on managing content; Expression engine has been around for longer thus naturally amassing a larger community and plugin developers. Craft benefits from new technologies and fills in some gaps that expression engine lacks such as asset control. It should be noted where Craft dominates Expression Engine is the control panel; Craft's CP is beatifully designed and adopts responsive design.

### 5.2.7 Technologies Selection

#### Front-end Selection

**Technology:** HTML & CSS

**Why:** Whilst XML provides the ability to structure your own language based on data, HTML is the basis of most CMS' generally feels more suited as Propel will base its data on styling. XML would seem better suited to information based application such as TV Guides, Blog feeds etc.

**Technology:** LESS

**Why:** LESS provides users with the ability to program in CSS with a wide variety of functionality and clarity when writing large stylesheets. LESS will allow for a much more sustainable project as the design and build grows larger with no extra HTTP costs. SASS also has the same functionality and is generally used more so than LESS in the community but the developer is comfortable with the later.

**Technology:** Angular.js/jQuery

**Why:** Ember is an extremely feature rich base MV framework that has many dependencies; although

this may be suited to some applications that require these libraries Propel does not. Angular has a smaller footprint of net size with all of the functionality required for Propel's needs. jQuery will come as a base in our other chosen technologies and help keep the project sustainable.

| Framework         | Net Size | Size with required dependencies                             |
|-------------------|----------|---|
| AngularJS 1.2.22  | 39.5kb   | 39.5kb  |
| Backbone.js 1.1.2 | 6.5kb    | 43.5kb (jQuery + Underscore)<br>20.6kb (Zepto + Underscore) |
| Ember.js 1.6.1    | 90kb     | 136.2kb (jQuery + Handlebars)                               |

[Figure 08: Tabular data from airpair.com displaying the memory weight of each popular MV frameworks]

### 5.2.8 Server Side Selection

**Technologies:** PHP, Expression Engine, MYSQL

**Why:** Each of these technologies work in tandem; Expression engine runs on PHP that uses MYSQL for storing data. EE trumps other candidate CMS' purely on extensibility, community and out of the box functionality. One of Expression Engine's features that will be at the core of Propel's functionality is the channel form—a feature that allows members to post to the back end, this will power the posting of listings. In addition to this the developer has over 2 years experience in using EE/PHP and only recently has begun using craft for small projects.

### External Technologies

Propel will also require external technologies that will benefit the build.

**Google Analytics:** will benefit Propel's build by giving the admin an insight to which listings are most popular, what devices users are viewing the site on, how aged browsers are coping and the geolocation of visitors along with many other services.

**Mailchimp:** Email marketing will be an additional avenue for Propel's commercial strategies to manifest with the goal of attracting more users/applicants. Mailchimp is a holistic emailing platform that allows for auto responders, mailing templates, user lists and many other features that will benefit Propel.

**CDN:** A content delivery network will be used for some of Propel's assets to help fight long load times, services like Amazon's CloudFront, Cloudflare, Max CDN and a Propel based CDN are all possibilities that will be decided further in development.

**ITTT:** If This Then That is a web service that allows you to hook into services such as RSS and in-

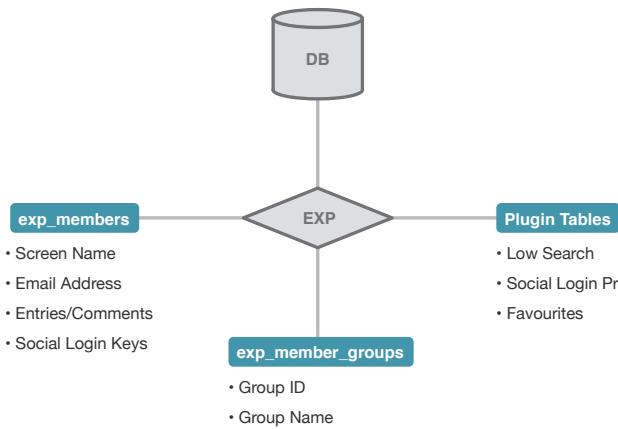
-stantly update to twitter or facebook. In addition to Mailchimp this service will be used as a platform for marketing.

## 5.3 System Design

The original goal of Propel was to have a fully fledged system that began with a database and moved stored information into a client side interface that could be interacted with. This goal has not changed as all of the highest risk factors can be achieved to a standard with the addition of extra functionality.

### 5.3.1 System Analysis

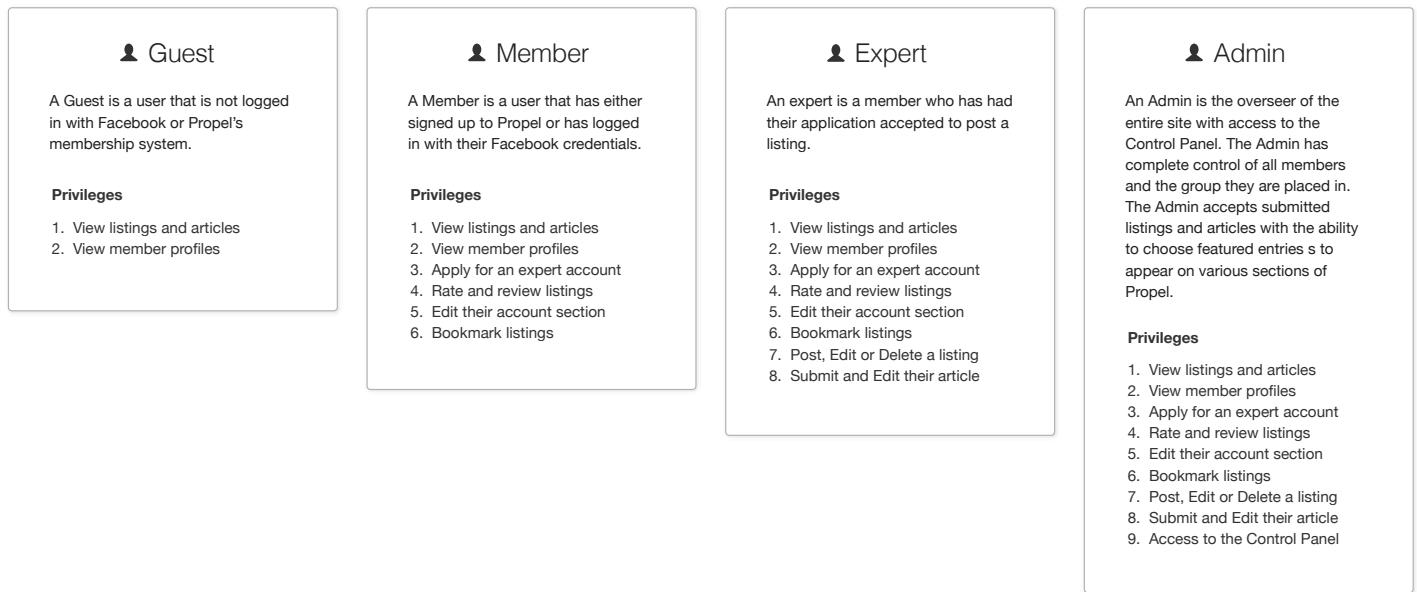
**Membership:** Propel's membership is powered by Expression Engine's member module with the addition of the 'Social Login Pro' an add on from Yuri Salimovskiy at IntoEEtive. Social Login Pro allows for the user to login to Propel with their Facebook credentials. More importantly Social Login Pro stores Facebook member's information directly into the Expression Engine Database table `exp\_members`. Originally the developer aimed to achieve this but had the fall back option of only starting a session whilst logged in with Facebook. With the Facebook member's information into Propel's database it will allow for customization of their profile and the ability for the Site Admin to alter the member's membership status in return allowing them to post to the back end.



[Figure 09: a view of Propel's database displaying information input from a facebook login]

Working in tandem with this setup is the plugin 'Custom System Messages' from Brian Litzinger at Bold Minded. Custom System Messages allows for the customization forgotten password forms and error re-directs allowing for total control over Expression Engine's member module.

This allows Propel to look consistent and push towards it's individual brand agenda instead of promoting Expression Engine's.



[Figure 10: A relational view of all the member types that exist in Propel, ranging from Guest to Admin]

**Listing/Article Management:** At Propel's core, expert privileges to post, edit and delete listings are a vital feature that will undoubtedly gauge success of the system. Giving members the ability to do this without requesting permissions relays a more intuitive and trustworthy system. Updating on the fly will bolster Propel's meticulously built structure and remove sticking points users are usually frustrated with on other similar services.

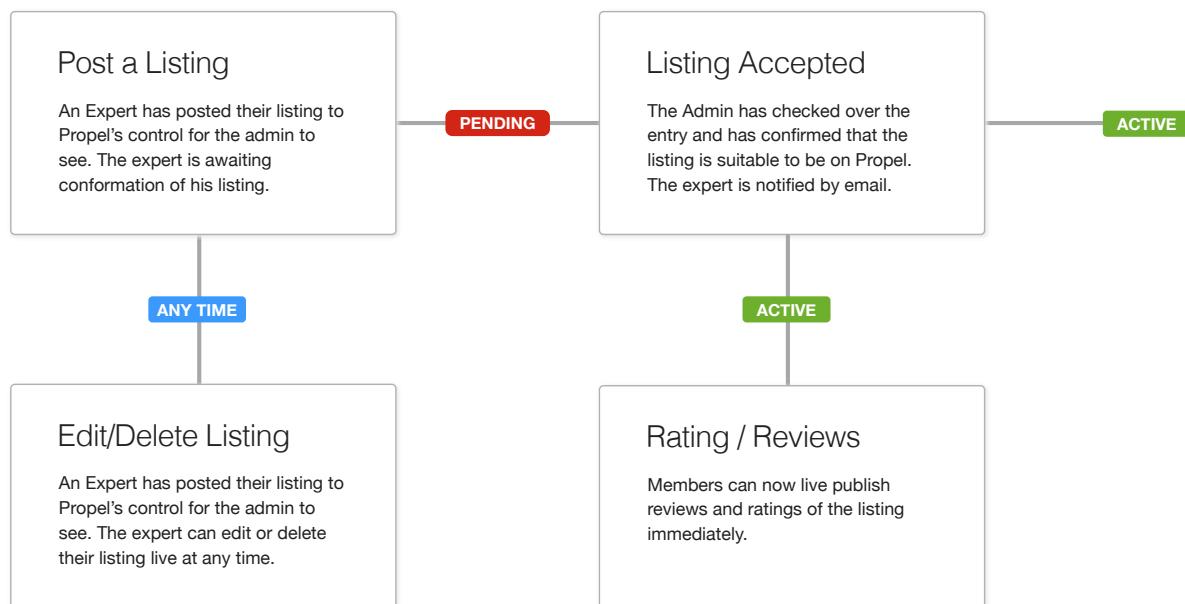
A listing begins by an 'Expert' member submitting an entry via the 'Post a Listing' form located in the account section. The information that is submitted is posted into the back end system automatically through the use of Expression Engine's Channel Form functionality. The Expert's submitted information will be stored in the database table `exp\_channel\_data` and images will be stored in the uploads folder.

These entries published to the back end arrive in a closed status—unable to be seen on the live site as they are to be validated by the Admin; this ensures that Propel's content will not jeopardized by malicious users. Forms submitted will be validated via the server and front end methods; for

example, if javascript is turned off the User will be prompted with a submission error on an external page. Whilst javascript remains active in the User's browser front end validation will be regulated using the plugin jQuery Validate for inline error handling. In addition to inline validation forms will also have persistent data values stored locally, until the form is submitted, Users won't lose any precious data if they accidentally close their tab or browser—Data storage for forms will be implemented via the jQuery plugin Garlic.js.

"I am convinced that the absolute worst case of UX fail is a form wherein, if you submit an invalid input, the form is wiped clean on a page refresh with a little red error above it, "invalid password." Well, thanks champ, I know, I hit the J key instead of the K, but now you want me to insert my email address all over again?"

— **Emily Campbell**, layervault.com



[Figure 11: A structured process of how a listing becomes active on Propel]

### 5.3.2 Expression Engine

Propel is implemented into the content management system Expression Engine from Ellis Labs, an extensible and versatile software with many built in features. Expression Engine is based on Ellis Lab's previous project CodeIgniter and is built into a Model View Controller system structure. Propel requires to utilize an MVC framework for the sake of maintenance and scalability.

*“At the heart of MVC is what I call Separated Presentation. The idea behind Separated Presentation is to make a clear division between domain objects that model our perception of the real world, and presentation objects that are the GUI elements we see on the screen. Domain objects should be completely self contained and work without reference to the presentation, they should also be able to support multiple presentations, possibly simultaneously.”*

—**Martin Fowler**, <http://martinfowler.com/eaaDev/uiArchs.html>

Expression Engine's implementation does not effect the front end code, meaning no extra scripts are included into the client side automatically by the CMS. This ensures that there is containment on the server side and work without reference to the interface. Expression Engine's is also the developers CMS of choice as he has over 2 years commercial experience in building applications and software with it.

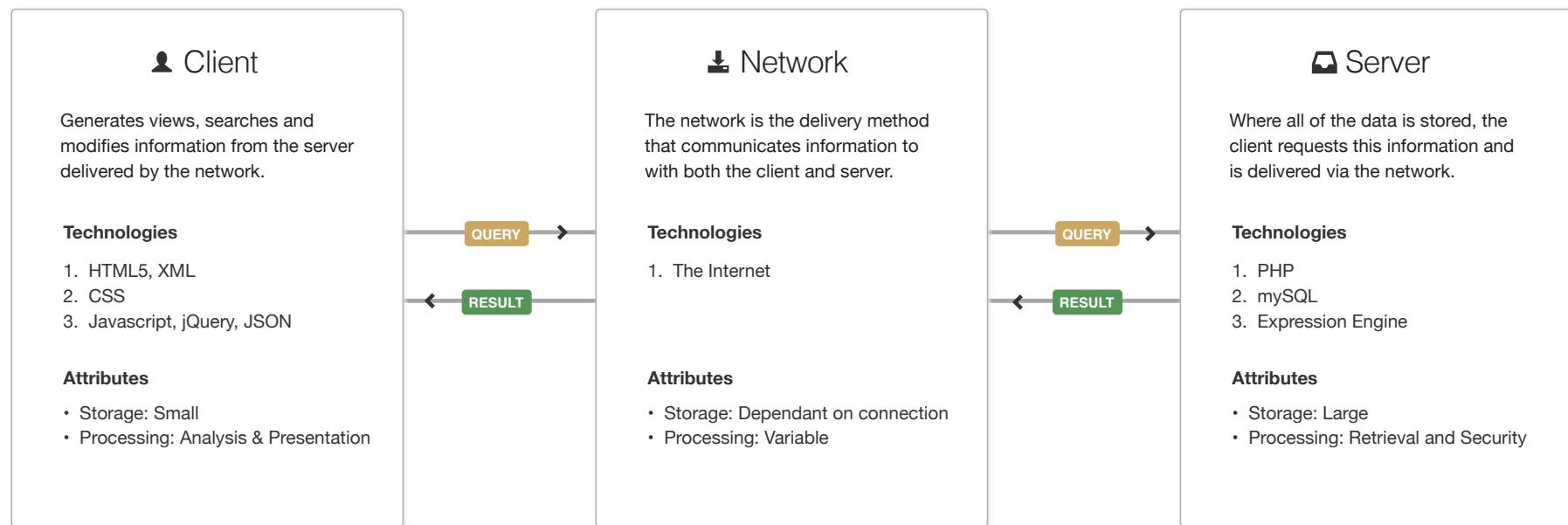
*“A good CMS should be scalable, and these CMSs are built for scalability. ExpressionEngine touts a number of partners on their website like Adobe, Apple, Disney, Ford, Nike, and more. While there are no specifics on where ExpressionEngine is used within these corporations, it is a CMS that is trusted amongst massive corporations.”*

—**Aaron Bushnell**, [appendto.com](http://appendto.com)

**Why not CodeIgniter or Laravel?:** Propel will potentially contain a great deal of content and with the ability for members to submit data to the back end, a thought out and structured database will be required. Expression Engine can take on this role and preform exceptionally well at managing allotted information. This is because of Expression Engine's extensible nature and does not assume the developers content like other CMS' such as Wordpress.

With Expression Engine's arsenal of features, the addition of it's many plugins, addons and extensions, these attributes make EE the perfect framework for Propel integrate with. Like many CMS' Expression Engine is heavily supported by a community of developers that release software open source to others for production in commercial projects.

## Client—Server Model



[Figure 12: The client server model view of Propel, displaying how information is requested and retrieved]

### 5.3.3 System Alterations

Whilst all of the major risks were accomplished the developer made a decision to mediate minor risks or improve on previous concepts. Namely the Facebook login method, implementing a front end framework like Angular.JS and preventing dilution of listings.

**Facebook Login:** With the original goal of allowing Users to sign in with their Facebook account and to create a session, the Admin would not have the ability to upgrade the User to an expert. Bookmarking would also be temporary thus making a Facebook login fruitless. The developer was able to utilize the plugin ‘Social Login Pro’ to create an account on a successful login as mentioned above. This contributes greatly to the User’s experience whilst navigating and using Propel. Instead of cumbersomely creating an account Users can enter their credentials and immediately begin to benefit from Propel’s services. There is also the added bonus of sharing listings and blog articles on their Facebook accounts.

“The social login approach is an attractive one stop shop. Getting into the app immediately becomes extremely easy. Plus, almost every product or service out there wants users to share the message on their own social media. This makes it way easier and is one reason why integrating social media is quickly becoming the norm.”

— **MK Cook**, <http://www.dtelepathy.com/blog/design/ux-flows-sign-ups>

**Axing AngularJS:** Originally the developer had planned to implement the Expression Engine system and templating into Angular.JS routes, creating a silky feel to navigating through pages. This would have also required the extensive use of ARIA (Accessible Rich Internet Applications) to ensure search engines and screen readers would interpret the Asynchronous data incoming to the DOM. Whilst ARIA will still be implemented into Propel it begged the question—was Angular really required for this application?

AngularJS is an open source javascript web application framework for single page websites. Whilst the original intent was to give a native to feel to Propel, it was discovered by the Developer this could be achieved elegantly with jQuery’s AJAX feature. In addition to calling and utilizing an already cached script file (jQuery.js); Propel can benefit from reducing its overall page weight and HTTP requests with the removal of AngularJS.

### 5.3.4 Additional Features

In addition to the mediated or achieved features the Developer also investigated further functionality to better the application Propel post prototype.

**Reviews and Ratings:** Reviews and ratings are present in almost all directories; originally it was thought that this would not be required in Propel as it was about promoting a local business and not potentially damaging it's reputation. Through consideration it was decided that this would be a feature that will be implemented into the final build. Members will have the ability to rate a listing and review it's service adding a layer of credibility to Propel's listings.

**Listing and Article Categories:** Categories allow Users to sort content with entry types, with this feature Propel's search functionality will become much more intuitive. With the addition of the plugin 'Low Search' multiple categories can be selected for filtering returned results. This will take affect on the listing and blog pages for all Users.

**Luminosity Detection:** Luminosity detection is an emerging technology being brought to websites by the use of their device's light sensor. The light sensor can detect how bright the User's surroundings are and with the help of javascript's Ambient Light Events. Luminosity detection will allow Propel to alter it's styling based on the lighting in the room; for example if it's pitch black in the User's surrounding the colours will transition to become more vibrant.

Although Luminosity Detection support is limited it is an emerging technology that will soon be implemented into Google Chrome, Safari and is already present in Mozilla's Firefox.

### Browser compatibility

| Desktop       | Mobile        |                             |                   |               |               |
|---------------|---------------|-----------------------------|-------------------|---------------|---------------|
| Feature       | Chrome        | Firefox (Gecko)             | Internet Explorer | Opera         | Safari        |
| Basic support | Not supported | 22.0 (22.0) (Mac OS X only) | Not supported     | Not supported | Not supported |

#### Gecko-specific notes

The [deviceLight](#) event is implemented and preference enabled by default in Firefox Mobile for Android (15.0) and in Firefox OS (B2G). Starting with Gecko 22.0 (Firefox 22.0 / Thunderbird 22.0 / SeaMonkey 2.19) a desktop implementation for Mac OS X is also available. Support for Windows 7 is in progress (see [bug 754199](#)).

[Figure 13: A browser compatibility table for the deviceLight event provided by developer.mozilla.org]

## 5.4 Functional Requirements

### 5.4.1 Atomic Level

Analyzing the project will include a specification for each atomic functional requirement ensuring that a base level of understanding is met to structure the system.

**Requirement:** #001 Log In

**Description:** Users will have the ability to log into their account with their details.

**Rational:** To keep a user's listing secure along with any sensitive details.

**Dependencies:** #002

**Requirement:** #002 Register

**Description:** Users will have the ability to register an account with their details.

**Rational:** To allow users the ability log into Propel or retrieve their accounts.

**Dependencies:** Requires user to have an email address that they have access to.

**Requirement:** #003 Post a listing

**Description:** Upgraded users will have the ability to post a listing to Propel.

**Rational:** Allow upgraded users to populate Propel with their listing.

**Dependencies:** #005

**Requirement:** #004 Apply for an upgraded account

**Description:** Registered users will have the ability to apply for an upgraded membership

**Rational:** Users require an upgraded account to add a listing

**Dependencies:** #001, #002

### 5.4.2 High Level Requirements

With a core understanding of the base system requirements and dependencies, an in-depth evaluation of the functionality required will shed light on what technologies will be selected to accomplish them.

**Requirement:** #005 Edit Listing

**Description:** Users will have the ability to edit their current existing listing and submit their changes live to Expression Engine.

**Rational:** Users may want to change details on their listing or add extra services keeping the site dynamic.

**Dependencies:** #001, #002, #003, #006.

**Requirement:** #006 Upgrade an account

**Description:** Admins will review applications and upgrade accounts.

**Rational:** Users who wish to have listings on Propel require to be an 'Expert'

**Dependencies:** Expression Engine Admin Login

**Requirement:** #007 Add Categories

**Description:** Users can select the category that best suits their listing

**Rational:** Categories help aid searching listings

**Dependencies:** #001, #002, #003

**Requirement:** #008 Bookmark an Entry

**Description:** Users will book mark a listing that they wish to save and review for later.

**Rational:** When comparing services that they may want to compare later on users will have a list of bookmarks to choose from.

**Dependencies:** Expression Engine Favorites plugin, #001, #002, #003.

**Requirement:** #009 Email conformation

**Description:** Once registered users will be sent a verification email to ensure that their input address is the one they own.

**Rational:** Adds a layer of security and also allows us to possibly add their email address into a mailing list for marketing purposes.

**Dependencies:** Expression Engine Member Module, #002.

**Requirement:** #010 Forgotten Password

**Description:** Users will click on a link and send a reset password email form to their registered address.

**Rational:** Users will require the ability to reset a forgotten password to access their account.

**Dependencies:** Expression Engine Member Module, #002, #003

## 5.5 Non Functional Requirements

This section contains initial requirements relating to the essence of Propel. Users may have made particular needs for the product that require interpretations at the concept level.

### 5.5.1 Look and Feel

Propel's appearance adheres to a visual language in which its users can instantly recognize that bases its refined principles on carefully crafted design and innovation. Using typography, hierarchy and language as a foundation—elements and legibility will be governed by print based design in accordance to grids, spacing, colour, scale and imagery

Propel's design follows the strict set of guidelines governed by its living style-guide document that will update as the concept continues to develop. The project's principle is to develop an underlying methodology that caters for a unified experience across an extensive list of platforms and devices.

The project aims to deliver a solution against generic directories that have a faceless appearance by carefully typesetting and structuring uploaded content. Imagery will communicate a distinctive voice that will convey a genuine and believable story. An adoption of an atomic design approach will provide clarity in the process for tailoring visual concept complexity to Propel.

“Atomic design provides a clear methodology for crafting design systems. Clients and team members are able to better appreciate the concept of design systems by actually seeing the steps laid out in front of them.” —Brad Frost

### 5.5.2 Usability and Humanity Requirements

Propel's interface will establish familiarity by having a consistent and standardized layout. Users who have become acquainted with Propel's UI will find clarity in navigation and the completion of tasks. Propel will attempt to guide the user by making it clear where to click to progress consistently with hierarchy and prominence.

Propel will Adhere to ARIA (accessible rich Internet application) and ensure that it is accessible to screen readers—in addition to this it was decided that support down to IE9 (Internet Explorer 9) after results from the Propel survey emerged.

Understanding a Propel's user persona are somewhat of a priority; due to this project's nature a varied user will always be the case. Example persona have been created based on research surveys carried out.

- Who: as a **Local Butcher**
- What: I can **List my business on Propel**
- Why: so that **I can connect with my customers, tell them the story of my business, display my products and offer package deals to increase my commerce.**

### 5.5.3 Performance

First impressions count and are a vital component to ensuring a visitor can tolerate if not implore load times whilst using Propel. To achieve this Propel will strive to ensure users have under a 2000ms load time on pages and functionality. For those on faster cellular networks and broadband connections 2 seconds is the recommended function completion time given by KISS Metrics.

"If an eCommerce website is making \$100,000 per day a 1 second delay could potentially cost you \$2.5million in lost sales **every year.**"—[Plus, Google. 'How Loading Time Affects Your Bottom Line'. N.p., 2015. Web. 1 May 2015.]

Due to the variety of Internet connections it may not be possible to achieve <2000ms load time; to combat this whilst asynchronous loading; a progress animation will display, notifying users of how much remains to download.

Propel will attempt to render correctly across a wide range of browsers as best possible to ensure that users from most devices receive the same experience regardless. In older browsers Propel will harness polyfill fixes to ensure key functionality is consistent. Propel will strive to have a 99.99% uptime instilling trust and reliability from users. The concept will also take advantage to a HTML5 Manifest saving up to 10mb into the user's browser cache.

### 5.5.4 Security

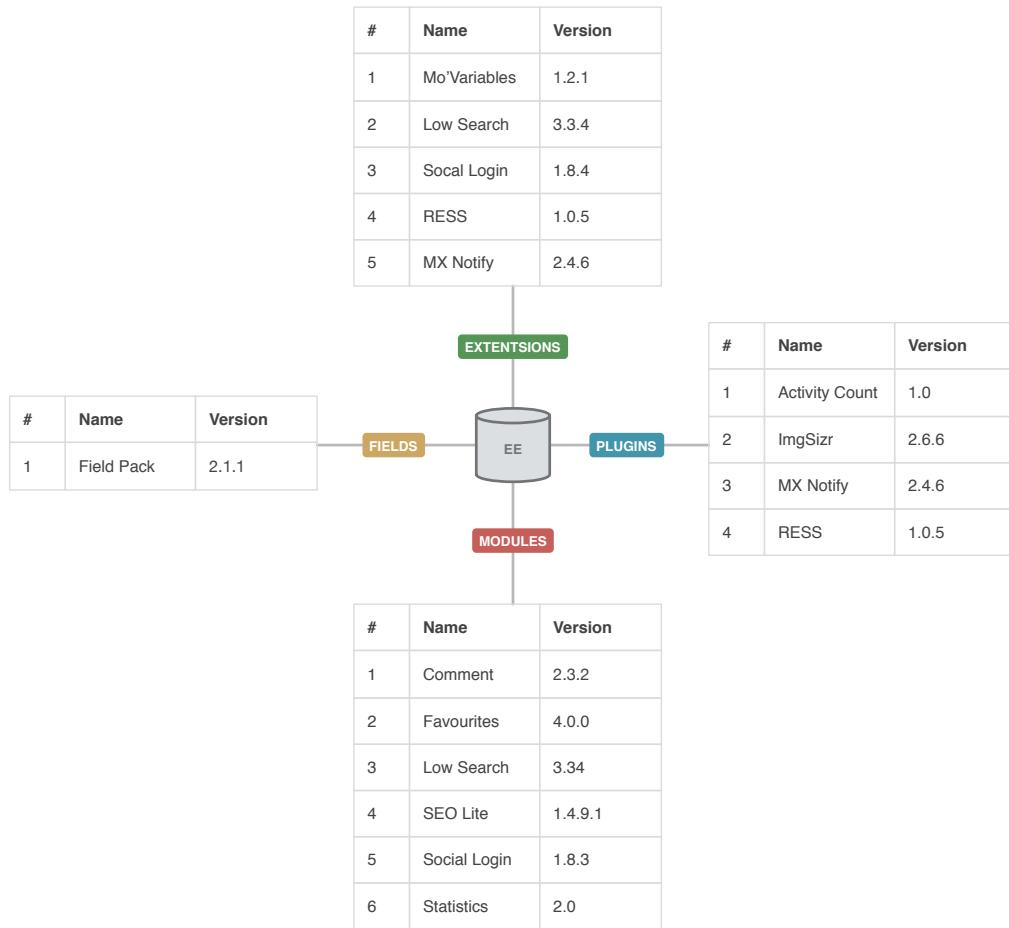
Propel's users information will presumably be stored in a database that has a overall admin that will possess all integral privileges. In addition to this Propel will strive to ensure data integrity for better quality. For passwords and other sensitive data Propel will take advantage of hashing these values.

## 6.0 Implementation

This section will entail how Propel's technologies have been implemented along with notable achievements and challenges that the developer encountered.

### 6.1 Propel's Structure

As decided previously Expression Engine is the CMS that Propel runs on and depends for its many features. In addition to Expression Engine's core functionality several plugins, extensions, modules and field-types have been added. Propel also has connections to several APIs for extra functionality such as logging in with Facebook or signing up to email alerts with Mailchimp.



[Figure 27: A relational view of Propel's EE install along with its various plugins, modules, extensions and fields]

#### 6.1.1 Extensions

An extension in Expression Engine uses hooks to allow developers access to core information.

## Mo' Variables

Mo Variables is an addon by Rob Sanchez that Adds many useful early-parsed global variables and conditionals to use in templates. Propel uses Mo variables for ease of calling on member functionality such as screen names or activity.

## RESS

RESS (Responsive Design + Server Side Components) is an add-on for ExpressionEngine from Tyssen Design that detects the screen resolution of a device via javascript and then sets a variable which can then be accessed in templates.

## MX Notify Control

MX Notify Control extension sends customized notifications by emails/PMs based on different triggers. Propel uses this feature to alert users that their member group has been updated to Expert status.

### 6.1.2 Field types

An Expression Engine fieldtype is primarily used on the control panel and usually only accessed by the admin. They build upon the base field types that come as standard and can include lists, switches and even maps.

### Pixel and Tonic's Field Pack

Field Pack is an addon from Brandon Kelly that lets the user choose from a handful of useful fieldtypes such as Checkboxes, Dropdown, Multiselect, Radio Buttons, Switch, Pill and List.

### 6.1.3 Plugins

Plugins for Expression Engine are based on code output and are usually separate from the control panel. It should be noted that addons can come with both a plugin and extension depending on functionality required.

### Activity Count

Activity Count add-on by Leela Krishna for ExpressionEngine calculates the entry count for current logged in member, filtered by status.

## ImgSizer

This ExpressionEngine plugin by David Rencher from Lumis will resize an image to the desired size specified in the tag and cache the resized version to the cache folder.

### 6.1.4 Modules

Modules are the most complex form of add-on. They can have their own database tables, backend control panels, tabs and fields that are included on the publish page, as well as their own tags for use in templates.

## Favourites

Favorites is an addon by Solspace that was provided to Propel free of charge and allows members to save both entries and other members as favorites, multiple times too if they wish, using an Admin pre-defined set of collections.

## Statistics

ExpressionEngine includes a Statistics Module that tracks a number of system statistics such as `last_comment_date`, `last_entry_date`, `last_visitor_date`, `most_visitor_date`, `most_visitors`, `total_anon`, `total_comments`, `total_entries`, `total_guests`, `total_logged_in` and `total_members`.

### 6.1.3 APIs

Propel has several APIs as extensions of the system connecting it to external services for the benefit of its users.

## Facebook

Working in tandem with the Social Login Pro addon is the Facebook API which allows users to login with their credentials in place of registering or signing in with an account.

## Mailchimp

At the base of every page is a mailing list sign up, whilst Expression Engine could easily accommodate this functionality it was decided Mailchimp would be used as the main email marketing tool. Mailchimp provides users with Auto-responders, mailing campaigns and much more.

## 6.2 Challenges and Achievements

Through-out the development of Propel the developer has faced many challenges that have ultimately defined the outcome of it's user experience. With each task completed Propel evolved significantly to cater for ease of use and a hight coding standard.

### 6.2.1 Login System

Logging into Propel is an integral feature that opens up much of the applications functionality to it's users. To log in users will first have to register an account or take an optional route and authenticate with Facebook.

#### The Challenge

Propel's login system required to be streamlined allowing users a hassle free registration process. Expression Engine's base member module isn't an automatic implementation and must be coded into templates. This system was designed to have registration, login, forgotten password and Facebook login functionality for users to access their accounts.

#### How it was achieved

Using Expression Engine's base login forms that come with commercial installs allowed the developer to customize login forms and integrate them with the front-end interface. All login templates where placed in the `site.group` directory to form the URLs '`example.com/site/sign-in'`

```
<div class="single-page-form right-toggled">
<exp:freemember:register form_class="organic-login" return="site/register/post"
require="username|email|password|password_confirm">
    <input type="hidden" name="XID" value="{XID_HASH}" />
    <legend class="hidden">Create an Account Account</legend>
    <fieldset>
        <div class="field">
            <label for="username">Username</label>
            <input type="text" placeholder="John Bishop" name="username">
        </div><!--field-->
```

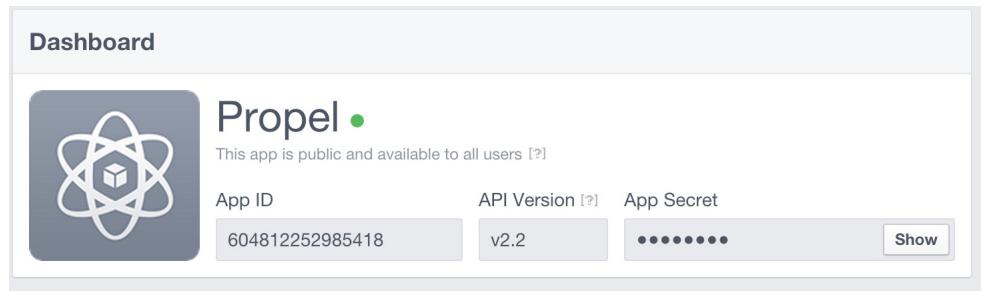
```
<div class="tabbed-form">
<div class="single-page-form right-toggled">
<exp:freemember:forgot_password return="site/password-retrieval/post" requires="email"
form_class="organic-login">
    <legend class="hidden">Create an Account Account</legend>
    <fieldset>
        <div class="field">
            <label for="username">Email Address</label>
            <input type="text" name="email" placeholder="johnbishop@example.com">
        </div><!--field-->
        <div class="field submit">
            <input type="submit" class="btn green" name="submit" value="Reset Password
">
        </div><!--field-->
    </fieldset>
</exp:freemember:forgot_password>
</div><!--form-1-->
```

```
<div class="single-page-form left-toggled">
    {if segment_3 == 'listings' AND segment_4 != ''}
    {exp:social_login_pro:form return="listings/page/{segment_4}"
    class="facebook-login"}
    {if:else}
    {exp:social_login_pro:form return="account/index" class="facebook-
login"}
    {if}
        <legend class="hidden">Log in with Facebook</legend>
    <fieldset>
        <div class="fb-login">
            {providers}
            <input name="provider" type="hidden" value="{provider_name}">
            {/providers}
            <i class="icon-facebook"></i><input type="submit" class="facebook-
login-btn" value="Login with Facebook">
        </div><!--fb-login-->
    </fieldset>
    {/exp:social_login_pro:form}
    {if segment_3 == 'listings' AND segment_4 != ''}
    {exp:member:login_form return="listings/page/{segment_4}"
    form_class="organic-login"}
    {if:else}
    {exp:member:login_form return="account/index" form_class="organic-
login"}
    {if}
        <input type="hidden" name="XID" value="{XID_HASH}" />
```

[Figure 28, 29, 30: A Code view of files password-retrieve.html, sign-in.html, register.html]

In addition to each of the form code there are various segment variables and their function is to detect if a user is attempting to log in from using a listing to review. If this condition passes the user will log in and be directed to that listing instead of to an account page.



[Figure 31: Propel's application authentication for the Facebook API allowing users to login with their credentials]

Figure 31 shows how the developer references the facebook API, these details are then passed through Social Login Pro's extension page located in the control panel. When a user logs in with facebook they are instantly entered as a member into Expression Engine's database. This in turn allows admins to upgrade them as members to experts giving the Facebook user the potential to post a listing.

| Super Admin              | Expert           | Normal User              | Guest | Super Admin | Expert           | Normal User | Guest                    |
|--------------------------|------------------|--------------------------|-------|-------------|------------------|-------------|--------------------------|
| 900168083335808@facebook | Stacey Elizabeth | stacey_keays@hotmail.com |       | 1/14/15     | 4/16/15 10:42 AM | Experts     | <input type="checkbox"/> |

[Figure 32: An example of a Facebook user that has been upgraded to an Expert]

## Outcome

Propel's membership functionality is a fully fledged and reliable system that has been implemented to a commercial standard. With the integration of a the research driven Facebook Login users can instantly reap the benefits of membership without having to create an account whilst the register serves as a fall back. Logging in is a seamless journey on Propel because of it's minimalistic and user centered design coupled with comprehensive functions guiding the user to their content.

### 6.2.2 Become an Expert

Propel's expert group feature lets admins control what content is entered into the application. In addition to it's obvious security benefits it also instills a sense of pride to users that have been accepted onto Propel.

## The Challenge

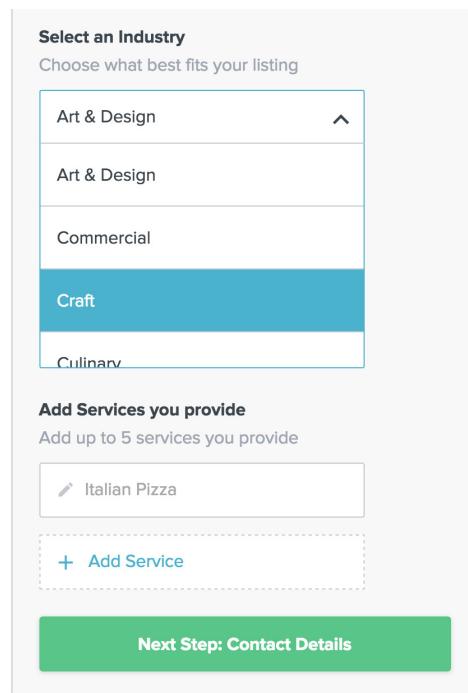
The become an expert page is made up of a three step form to break down the application process into bite-size chunks and in turn enticing the member to complete it. The developer's challenge was to create a seamless form that allowed for inline validation and garlic.js integration all in a single page.

## How it was achieved

Starting with the basics the Become an Expert page makes use of Expression Engine's Channel Form- a feature that lets members from the front post to the back end. Originally this was intended to be a standalone form that would be input via FreeForm Pro, instead the developer has intuitively streamlined the system to automatically enter as an entry. When members are upgraded to experts their listing is instantly visible and pre-populated with their previous input results.

Channel form by convention outputs a frontend version of the control panels fields, to ensure for brand equity Propel required a customization feature. Whilst this could have been done merely by changing CSS in the /themes/ directory the developer decided to code their own. Using jQuery each of the fields where able to be customized and successfully enter into the submitted entry.

```
//dynamically created elements need an .on event to be manipulated
$(document).on('click', '.add-cell', function(e){
    //Define grid clicked
    var focusGrid = $(this).parent().find('ul');
    //Track amount of cells
    var cells = $(focusGrid).children().length;
    //Track defined max amount of cells
    var maxCells = $(focusGrid).data('max-rows');
    //Track Channel Field variables
    var fieldName = $(focusGrid).data('field-name');
    //Get the last row ID
    var rowId = $(focusGrid).find('li:last-child :input').data('row-id');
    //Get base template for cells
    var cellHtml = $(focusGrid).find('li:first-child').html();
    //Cell limiter
    if(cells < maxCells){
        //Append new grid item
        $(focusGrid).append('<li class="cell">' + cellHtml + '</li>');
        //Add +1 to row
        ++rowId;
        //Each loop through each of the form elements
        $(focusGrid).find('li:last-child :input').each(function(){
            //Get Class Input
            var inputClass = $(this).attr('class');
            //Get the column
            var colId = $(this).data('col-id');
            //Update Row id
            $(this).attr('data-row-id', rowId);
            if(inputClass == "hid-file"){
                $(this).attr('name', fieldName + [rows][new_row_+rowId+']);
            }else if(inputClass == "hid-dir"){
                $(this).attr('name', fieldName + [rows][new_row_+rowId+']);
            }else{
                //Append new name
                $(this).attr('name', fieldName + [rows][new_row_+rowId+']);
            }
        });
        //Add remove field
        $(focusGrid).find('li:last-child aside').prepend('<a href="#remov
        //Focus field
        $(focusGrid).find('li input').focus();
    }
}); //If
//prevent Linking
e.preventDefault();
}); //document on click
```



[Figure 33: A side by side comparison of code(main.js) and front-end showing a grid field's functionality]

In addition to custom fields, the form is segmented up into three steps- each step had to be validated as the user progressed, this was achieved using jQuery once again. The user can only progress through the form as they fill in the required fields, this is a quality of life implementation and stops for any frustration at the end of the process.

The screenshot shows a web form titled 'Become an Expert'. At the top, a message reads: 'Interested in having your business listed on Propel? Fill us in on the story so far to be accepted.' Below this, three green circles numbered 1, 2, and 3 are connected by dashed arrows, indicating a sequential process. The first step, 'Step One: About your business', contains fields for 'Name your listing\*' (with placeholder 'Enter the name of your listing' and value 'Mario's Pizza Parlour') and 'Enter a tagline' (with placeholder 'In a short sentence describe what it is you do'). The second step, 'Address Line', contains a field with the value '123 Anystreet, Bangor, BT123' and an error message 'Please enter your address' below it.

[Figure 34: An overview of the step process and inline-validation]

## Outcome

Propel's expert application page is a complex collaborative of front and back end technologies that work in tandem to deliver an experience the user may not entirely recognize but will surely experience. With inline error handling, step by step validation and input field saved values the form is intuitive and native to the user—making applications efficient.

### 6.2.3 Listings

At the core of Propel are its listings, social hubs where local business owners can advertise their specialist services and market their renown. Propel's listing service was to be a comprehensive system that allowed experts to update their listing with ease in a control panel only they can access.

### The Challenge

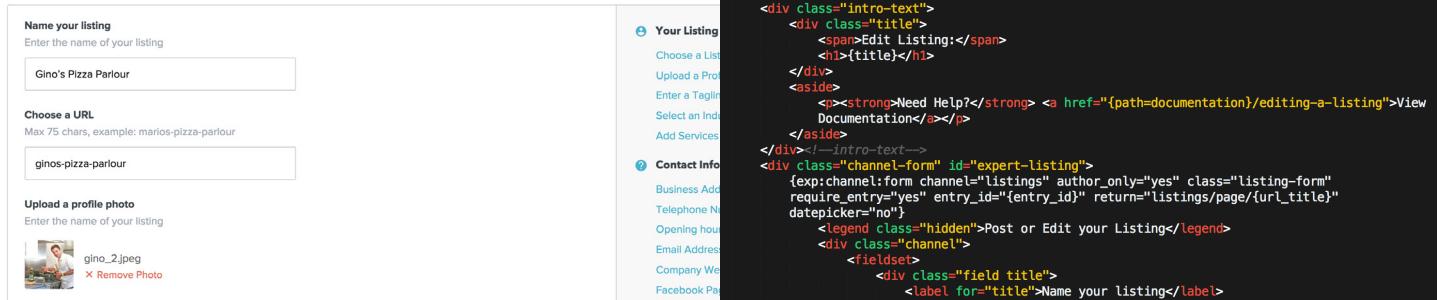
Experts require the ability to log into their account and edit their listing instantaneously. This data must go into Expression Engine and update instantly. Experts must have the ability to upload and remove images, enter multiple forms of data and choose a category for their listing. Experts will also have the option of viewing their listing statistics such as page views, bookmarks and reviews.

Members will have the ability to review on listings and also edit them at any given time. Any registered member will have the option to bookmark a listing for later review and view these in their profile page. In addition to this any user must have the ability to search for listings via keywords and categories in order to filter through results.

## How it was achieved

Similar to the ‘Become an Expert’ form functionality editing a listing utilized Expression Engine’s channel form tag to input data directly into an entry. The main difference in functionality is that pre-entered data pre-populates the edit form, this is done by wrapping the channel form in an entries tag.

### Gino's Pizza Parlour



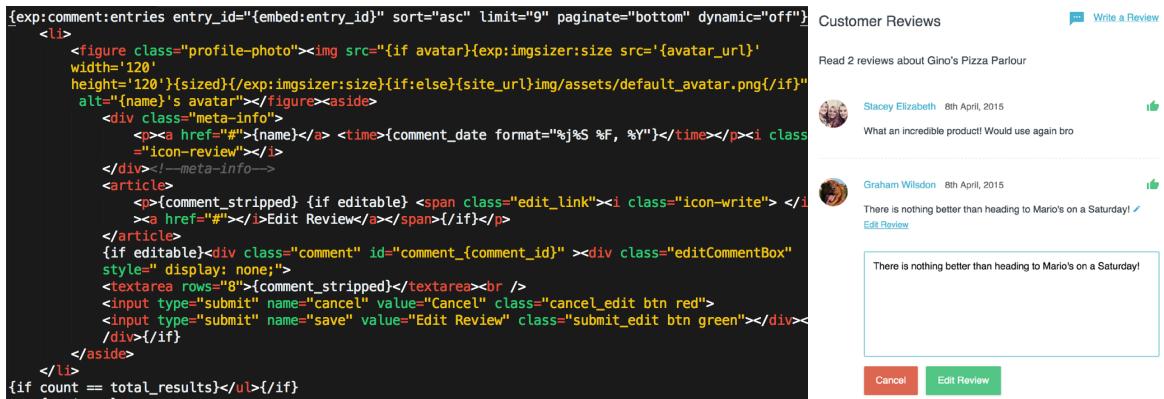
```

<div class="container">
  {exp:channel:entries channel="listings" dynamic="off" author_id="CURRENT_USER" cache="on"
  refresh="60" limit="1"}
  <div class="intro-text">
    <div class="title">
      <span>Edit Listing:</span>
      <h1>{title}</h1>
    </div>
    <div class="text">
      <p><strong>Need Help?</strong> <a href="{path=documentation}/editing-a-listing">View Documentation</a></p>
    </div>
  </div>
  <div class="channel-form" id="expert-listing">
    {exp:channel:form channel="listings" author_only="yes" class="listing-form" require_entry="yes" entry_id="{entry_id}" return="listings/page/{url_title}" datepicker="no"}
      <legend>Post or Edit your Listing</legend>
      <div class="channel">
        <fieldset>
          <div class="field title">
            <label for="title">Name your listing</label>
            <input type="text" value="Gino's Pizza Parlour" id="title" name="title" />
          </div>
          <div class="field url">
            <label for="url">Choose a URL</label>
            <input type="text" value="marios-pizza-parlour" id="url" name="url" />
          </div>
          <div class="field photo">
            <label for="photo">Upload a profile photo</label>
            <input type="file" value="gino_2.jpeg" id="photo" name="photo" />
            <span>Remove Photo</span>
          </div>
          <div class="field address">
            <label for="address">Business Address</label>
            <input type="text" value="123 Main Street" id="address" name="address" />
          </div>
          <div class="field phone">
            <label for="phone">Telephone Number</label>
            <input type="text" value="555-1234" id="phone" name="phone" />
          </div>
          <div class="field hours">
            <label for="hours">Opening hours</label>
            <input type="text" value="Monday-Friday 10am-6pm" id="hours" name="hours" />
          </div>
          <div class="field email">
            <label for="email">Email Address</label>
            <input type="text" value="info@mariospizza.com" id="email" name="email" />
          </div>
          <div class="field website">
            <label for="website">Company Website</label>
            <input type="text" value="http://mariospizza.com" id="website" name="website" />
          </div>
          <div class="field services">
            <label for="services">Add Services</label>
            <input type="text" value="Delivery, Takeout" id="services" name="services" />
          </div>
        </fieldset>
      </div>
    </div>
  </div>

```

[Figure 35: An overview of Propel’s editing station and the code(my-listing.html) required to enter its features]

Although the Become an Expert version uses custom grid and image fields the developer could not replicate this functionality on the edit listing form. This would have required a custom coded module that would hook into grid row and column Ids.



```

{exp:comment:entries entry_id="{embed:entry_id}" sort="asc" limit="9" paginate="bottom" dynamic="off"}
  <li>
    <figure class="profile-photo"></figure><aside>
      <div class="meta-info">
        <p><a href="#">name</a> <time>comment_date format="%j %F, %Y"</time></p>
        <i class="icon-review"></i>
      </div>
      <div>!--meta-info-->
      <article>
        <p>{comment_stripped}</p>
        <div>{if editable}<span>Edit Review</span>{/if}</div>
      </article>
      <div>{if editable}<div><div>comment id="comment_{comment_id}"><div>editCommentBox<style="display: none;">
        <textarea rows="8">{comment_stripped}</textarea><br />
        <input type="submit" name="cancel" value="Cancel" class="cancel_edit btn red">
        <input type="submit" name="save" value="Edit Review" class="submit_edit btn green"></div>
      </div>{/if}</div>
    </div>
  </li>
{if count == total_results}<ul>{/if}

```

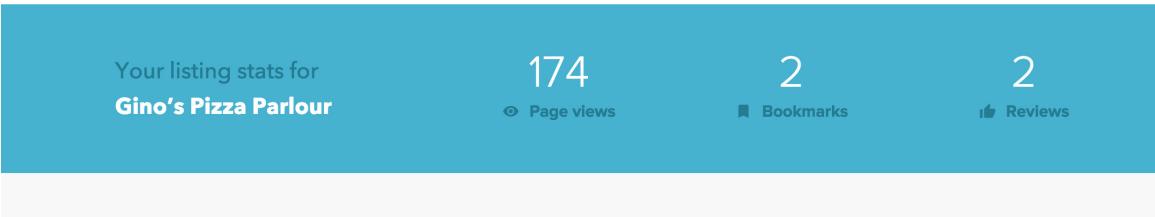
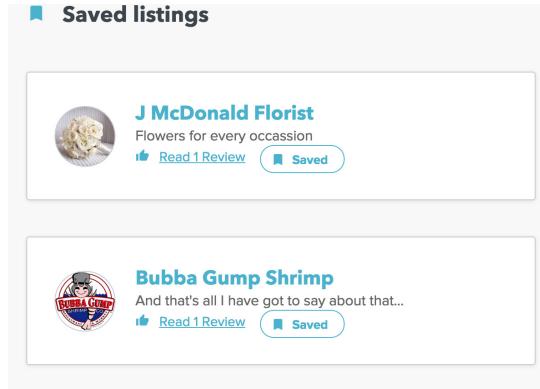
[Figure 36: An overview of Propel’s reviews and code(\_page-reviews.html)]

All registered members have access to their profile, this page houses an activity feed of their latest actions on Propel. In addition to this Experts of Propel have the ability to view statistics based on their listing that includes page views, how many times it has been bookmarked and the review count. Page views are documented by Expression Engine's Statistics module, reviews are governed by the Comments module and finally bookmarks are displayed via SolSpace's Favourites addon.

```
{exp:channel:entries channel="listings" track_views="one" dynamic="off" cache="on" refresh="60"
limit="1" author_id="{CURRENT_USER}"
{if count > 0}
<section class="blue-area" id="account-info">
  <div class="container">
    <div class="listing-stats">
      <aside>
        <span>Your listing stats for</span>
        <h3>(title)</h3>
      </aside>!--
      <ul class="stats">
        <li class="col-3">
          <span class="numeric" id="views-count" data-count="{view_count_one}"></span>
          <span>1</span>
          <span class="icon-view"></span> Page views</p>
        </li>!--
        <li class="col-3">
          <span class="numeric" id="bookmarks-count" data-count="{exp:favorites:count entry_id='{entry_id}'}"></span>
          <span>1</span>
          <span class="icon-bookmark-filled"></span> Bookmarks</p>
        </li>!--
        <li class="col-3">
          <span class="numeric" id="reviews-count" data-count="{comment_total}"></span>
          <span>1</span>
          <span class="icon-review"></span> Reviews</p>
        </li>!--
      </ul>!--stats>
    </div>!--listing-stats>
  </div>!--container>
</section>!--blue-section>
{/if}
{exp:channel:entries}
```

```
{exp:comment:entries channel="listings" sort="desc" orderby="date" limit="5" no="no" author_id="{member_id}"}
<li>
  <figure class="profile-photo">
  </figure>!--
  <div class="meta-info">
    <><a href="#">({name})</a> <time>{comment_date format="%j %S %F %Y"}</time></p><span class="icon-review"></span>
  </div>!--meta-info>
  <article>
    <comment_stripped>
      {if editable}<span class="edit-link"><span class="icon-write"></span><a href="#">Edit Review</a></span>
      {/if}</p>
    </comment_stripped>
    <div class="comment" id="comment_{comment_id}">
      <div class="editCommentBox" style="display: none;">
        <textarea rows="8">{comment_stripped}</textarea>
        <input type="submit" name="cancel" value="Cancel" class="cancel-btn red">
        <input type="submit" name="save" value="Edit Review" class="submit_edit btn green">
      </div>
    </div>
  </article>
</li>
```

```
<ul class="bookmark-list">
{exp:favorites:entries channel="listings" limit="5"}<li>
  <figure class="listing-profile">
    
  </figure>!--
  <div class="listing-actions">
    <span><span class="icon-review"></span><a href="#">Write a Review</a></span>
    {path=listings/page}/{url_title}/#reviews-list">
      {if comment_total == 0}Write a Review{if:else}Read {comment_total} Reviews{if:else}0{if}{/if}</span>
      {embed=shared/_favourites-btn entry_id='{entry_id}'}
    </div>!--listing-actions>
  </div>!--
  <div class="tagline">
    <span>1</span>
    <span>1</span>
    <span>1</span>
  </div>!--
  <li class="no-dice">You haven't saved anything yet, why not <a href="#">Search for listings?</a></li>
{/if}
{exp:favorites:entries}
</ul>!--bookmark-list-->
```



[Figure 37: A collaboration of Propel's profile page (profile.html) and the code to output reviews, bookmarks and stats]

Propel's search feature uses Low Search, a comprehensive addon that has various features for creating rich queries to the site. Low Search allows for category searching and the ability to add weight to a field that directly influences results. The addon is incredibly well built and serves as the key component for users to find their desired listing.

[Figure 38: A collaboration of Propel's search feature and the code involved (listings/index.html, results.html)]

## Outcome

Propel's listing system is a diverse and flexible process that is tailored to users that come to the site in search for contacts. From editing a listing to finding it the system works intuitively for the user as opposed to against them. A user viewing their account's statistics gives tangible relative feedback and utility to their Propel visit alluring them to return.

## 6.2.4 Further Features

Further features have been implemented into Propel that the user may not notice at a first view but experience all the same. Some of these features are as follows:

- RESS Conditional Video Load
  - ImgSizer Resizing and caching images
  - Search Engine Optimization and Responsive Design
  - Propel's Custom jQuery plugins and function

## 7.0 Testing

This section is dedicated to the approach taken and various methods used in testing the Propel. Propel has been tested on three components: Device Rendering, Page Speed and Guerrilla and Interaction testing.

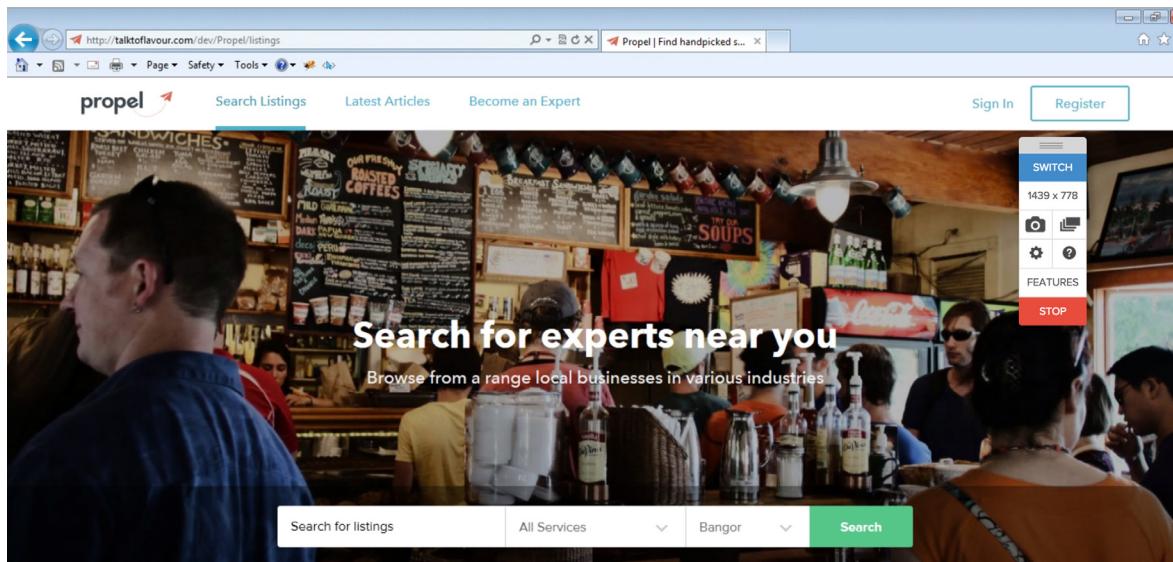
### 7.1 Device Rendering

Propel's system and layout has been tested on several devices and browsers with the addition of screen-reader testing for the visually impaired. The purpose of this is to attempt to make every user's experience regardless of screen orientation or browser (Down to IE 9)seamless.

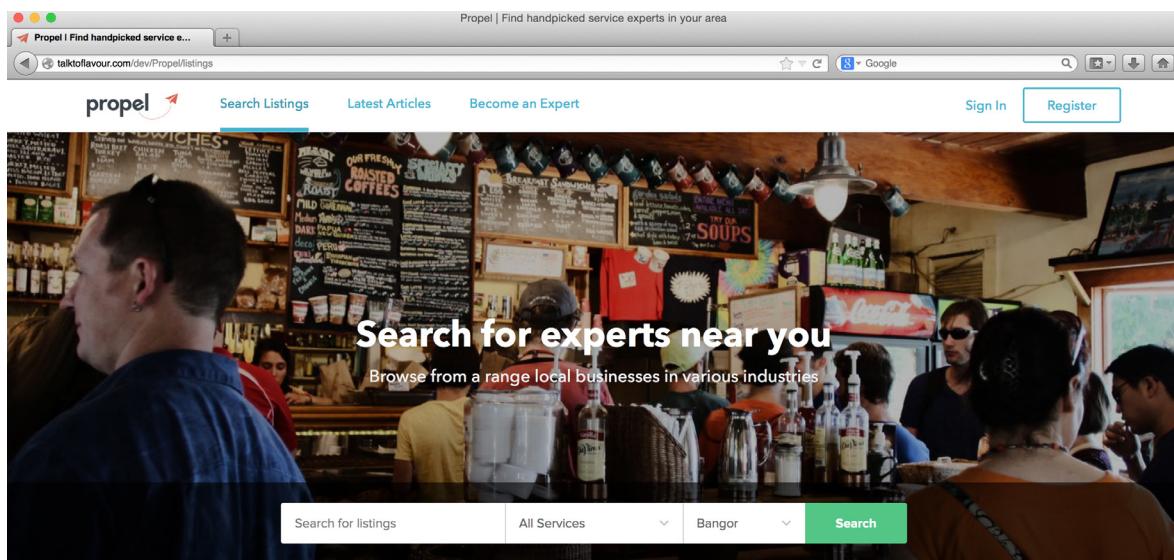
#### Process

As it isn't feasible to have a device lab at the disposal of Propel, BrowserStack has been used in its place. BrowserStack allows users to input a URL (or test locally) and choose which device or browser to view their chosen website in. Unlike other rendering applications BrowserStack uses a virtual machine to emulate a real browser window the user controls remotely. In order to test screen reading on Propel the developer enlisted the use of OSX's Voice Over and initiated the application in-browser.

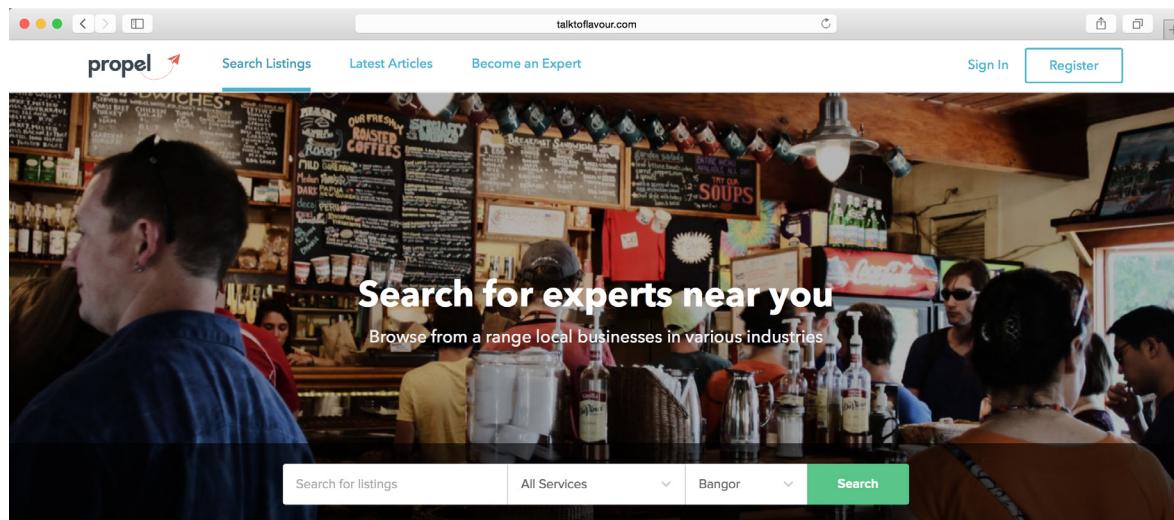
#### Results



[Figure 39: A view of Propel's listing page from BrowserStack Emulating Internet Explorer 9]

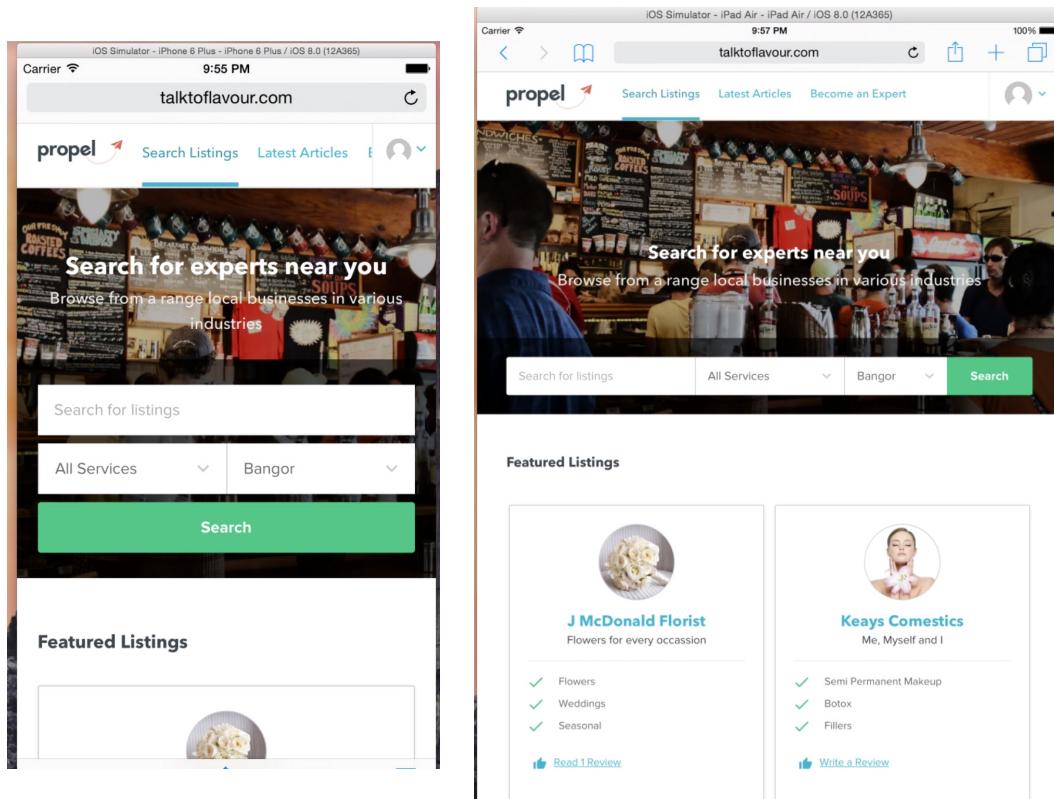


[Figure 40: Propel's Listing page as displayed in Firefox 37.0.2]

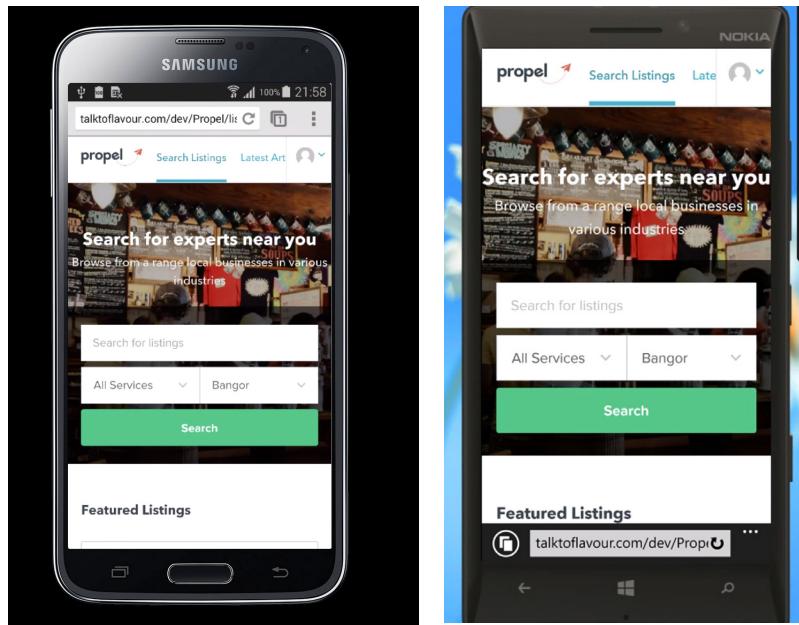


[Figure 41: Propel's Listing page as displayed in Safari 10.10]

Propel emulates beautifully in various browsers, with support ranging from legacy browsers such as IE 9 to the latest versions of modern applications. In addition to testing the desktop, mobile devices were also to be viewed as Propel is a responsive web application.

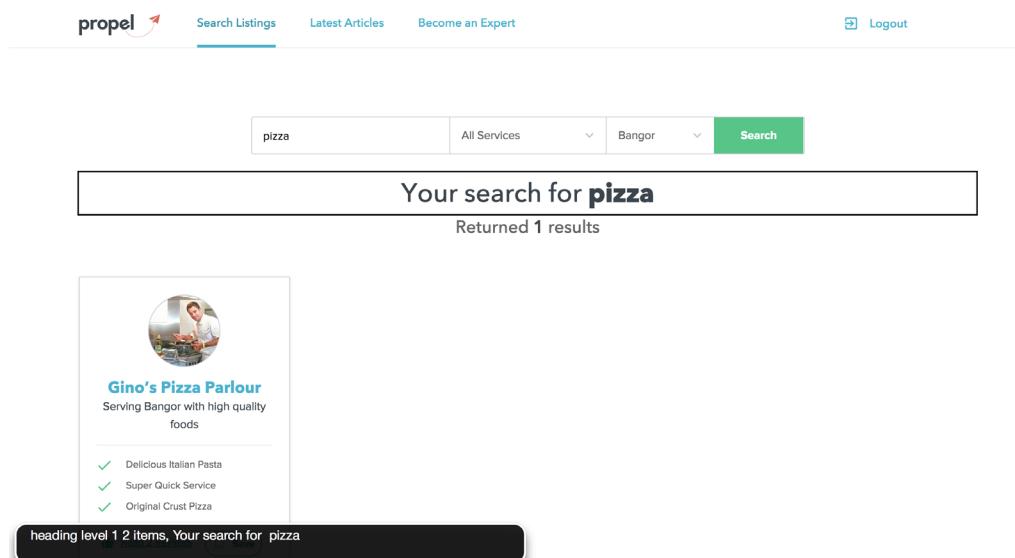


[Figure 42: Propel's Listing page as displayed on iPhone 6 and iPad Air]



[Figure 43: Propel's Listing page as displayed on Galaxy S5 and Lumia 930]

The final rendering test is to view or rather listen to Propel on a screen reader— Using VoiceOver it is possible to emulate what browsing the site would be like for the visually impaired users.



[Figure 44: Propel's Search Results page being interpreted by **VoiceOver in Google Chrome**]

## 7.2 Page Speed

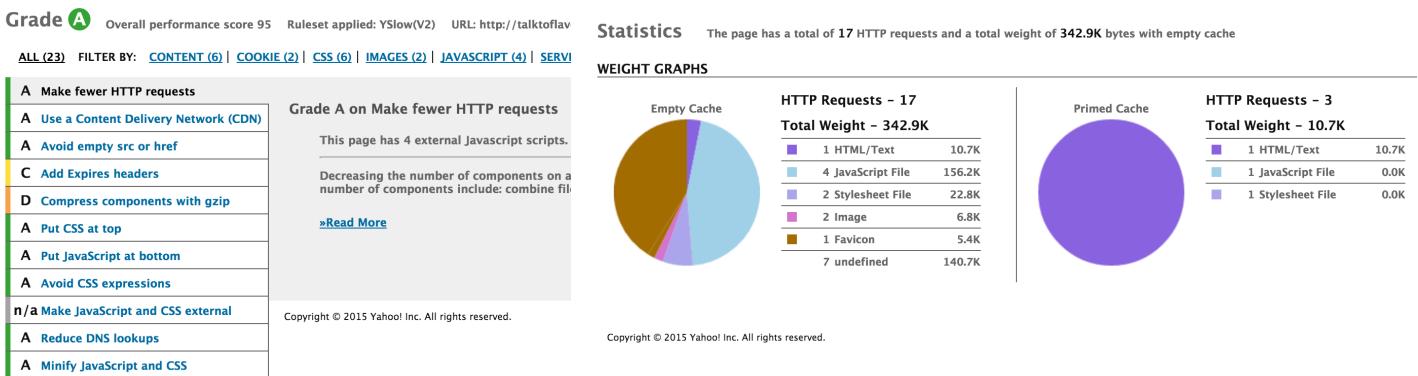
Page speed is of grave importance for the user's experience and there are many tools online to check how fast a website loads. Due to Propel's accessibility requirements page weight has been reduced as much as possible including lowering HTTP requests to a minimum. Expression Engine is also set to cache images along with expiry tags in the `.htaccess`.

### Process

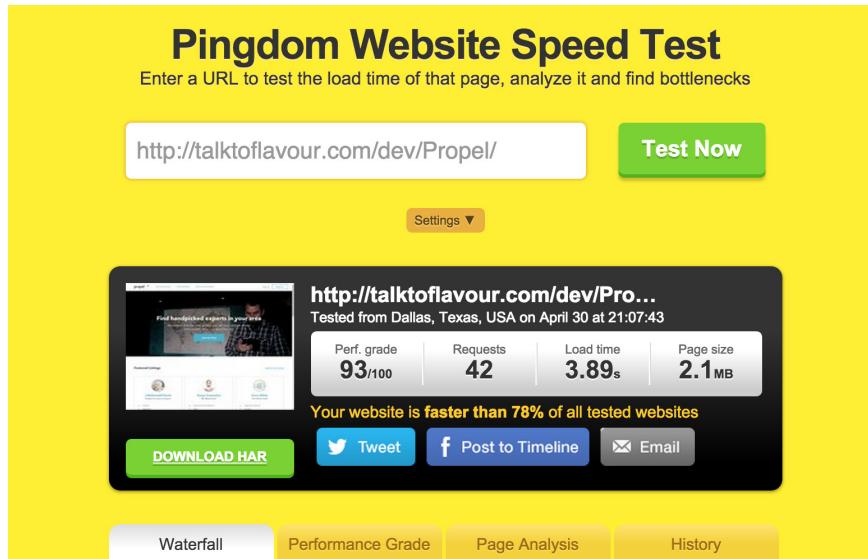
To test Propel's speed two tools were used, Yahoo's YSlow and Pingdom's Website Speed Test. Each of these applications have their unique benefits, YSlow breaks down the tested page into singular data allowing for improvement and giving a grade based on various factors, Pingdom rates an input website against others and relays a base percentage on performance.

### Results

Due to Propel's low http requests, minification, image cropping, conditional loading, compression and server caching the website is incredibly fast. Propel scores highly across all tests and boasts a low footprint and page weight specifically after caching.



[Figure 45: Propel's YSlow test results, on the left is it's overall grade (A) on the right is page weight/cache]



[Figure 45: Propel's Pingdom test results, showing a 78% speed increase over other tested websites]

### 7.3 Guerrilla and Interaction testing

With Propel loading exceptionally fast and rendering beautifully across various browsers a final bout of User testing would ensure the product is solidified. Interaction testing ensures that users can access and utilize features at their disposal.

### Process

Guerrilla testing is a term used for objective user based testing, where by the subject has a list of tasks to complete on the website. This is typically run by 3-12 people and afterwards they

document their results. Guerrilla testing quickly validates how effective a design is on its intended audience, whether certain functionality works in the way it is supposed to. The testing was conducted by the developer involving 5 subjects—each where given 5 functional tasks to complete, each gave a tick if they could complete it or cross if not.

## Results

| Subject | Create Account | Become Expert | Edit Listing | Bookmark Listing | View Profile |
|---------|----------------|---------------|--------------|------------------|--------------|
| 1       | ✓              | ✓             | ✓            | ✓                | ✓            |
| 2       | ✓              | ✓             | ✓            | ✓                | ✓            |
| 3       | ✓              | ✓             | ✓            | ✓                | ✓            |
| 4       | ✓              | ✓             | ✓            | ✓                | ✓            |
| 5       | ✓              | ✓             | ✓            | ✓                | ✓            |

[Figure 46: Propel's guerrilla test results showing that all subjects completed all tasks]

Propel's guerrilla test was a resounding success with the subjects, although all tasks were completed two of the five members gave feedback on what could be improved:

**“As a business owner I'd like to have the ability to preview my listing before posting it live”**  
**“As a customer i'd like to have the ability to save bookmarks into lists for future use”**

This feedback fits in perfectly with the agile form of development and make way for future features that have been requested to be implemented into Propel's current system. Both are very possible and would add extra functionality to help aid the user experience.

## 8.0 Evaluation

The process of creating Propel has been a challenging and rewarding project, from concept to completion it has evolved into a product ready for commercial use. Propel has extended Expression Engine far past its initial limits and has laid the foundations for an online community to grow.

### 8.1 Project outcomes

The outcome of this project Propel, enables businesses owners to easily create an online identity and connect with their customers. For users Propel is a valuable resource that lets them create contacts, source talented service experts and voice their opinion.

Propel's membership is an encompassing system that influences almost every section of the website. Segmenting member groups splits reviewers and experts creating separate roles in the Propel community. Registered members and experts have many utilities at their disposal such as bookmarking, reviewing and tangible statistic feedback on their listing.

The articles section displays to users just how knowledgeable their local service experts are. Latest articles are completely community driven by Propel's experts. Listing owners can instantly post or edit an article directly to Expression Engine.

The Expression Engine system has been extended with the use of developer addons from various contributors. Propel's system can be compared to the likes of laravel due to its technical capabilities. With multiple addons working in tandem it leaves Propel with the ability to scale out from its current limits.

Whilst Propel's system architecture is impressive its interface is also technically sophisticated. With Propel's custom javascript the site is incredibly responsive and remarkably portable. Responsive design is paramount through-out the website even to the extent where content is completely manipulated to benefit the end user.

Propel's titles, meta data and open-graph tags located in the <head> are entirely dynamic, populating as users enter their content. This makes for easily indexed data with specific sharing functionality when promoting a local business.

## 8.2 Agile Methodology

The agile methodology served Propel extremely well and fitted the projects needs very effectively. The reiteration of features led to many breakthroughs and the streamlining of functionality which ultimately shaped and evolved the project. Agile broke the project down into testable segments that allowed for ongoing development on a certain features.

An example of a feature that benefited from Agile was the application system built into Propel. In the initial iteration the form posted through separate to Expression Engine meaning if users where to be accepted it wouldn't save the data. With a re-iteration due to the Agile methodology the system was simplified and automatically moved into the entries as a closed version. This also keeps all accepted listings and pending in the one place for ease of use for the admin. If the developer had adopted a methodology like waterfall this could have perhaps been overlooked.

Although Agile proved mostly prosperous on occasion it may have been over pedantic. Features that have an expected outcome for example the search didn't need heavy re-iterations. Had Propel been a product built by a team Agile would have been adopted to it's full capabilities.

## 8.3 Development Schedule

Propel's development schedule was slightly delayed due to the change in concept early in the beginning stages. This set the project back by a few weeks but fortunately the developer accommodated to this by putting in extra hours.

After the initial set back everything went to schedule without any further delays, it should be noted in-fact that the developer finished the initial build of Propel weeks before it's completion date. This was due to the advancement gained whilst developing the prototype. The developer was able to build most of the modules in their infancy which in turn aided the Agile Methodology greatly due to the long iterative period gained.

Due to this extra time frame the developer invested their time into optimizing the site, an example of extra functionality would be the implementation of the RESS plugin. Mobile devices benefit from this change by helping with initial load times on the Propel's homepage by not having to render video, instead being served a background image.

## 9.0 Conclusion

This section aims to summaries the entirety of this report, reflect on the implementation and the developer's role along with suggesting future additions to Propel. This report has spanned from initial research to fully implementing a commercial product ready for deployment. Propel's build quality has much to owe to this process—Incremental documentation on a stage by stage basis has led the developer to the choices they have made.

## 9.1 Report Summary

The key point of this report was to document the process of creating Propel from it's infant stages to it's final build. I feel that this has been thoroughly achieved and to the benefit of Propel, without documenting the process it is difficult to fathom such a large project.

The report began with an introductory setting beginning with defining the task at hand and then progressed into idea generation and conceptual development. The Agile Methodology was undertaken to guide the project and ensure build quality. Afterwards the interface and branding was conceived, showing the immense detail undertaken. System design and candidate technologies where analysis and interpreted, Implementation and it's key features where documented. Testing was a major asset to Propel to insure accessibility for the majority of users including the visually impaired.

## 9.2 Reflection

Initially Propel started out as a project management tool for agencies and later after evaluating time frames and meeting with Jamie Robinson of Eyekiller, I changed the concept. I felt that I had taken on a project that tried to do many features instead of focusing on one and deploying it well. Propel sprung into life shortly after as one of my fallback concepts and I never looked back. Without a doubt I made the correct decision.

Using an Agile methodology has opened my eyes to responsible development and has taught me the key principles to create great software. I am pleased with the choice and will adopt it's methodology for future projects to come.

Whilst I feel the development of Propel is stalwart I am most proud of it's design and branding. I feel that Propel has a style equity that is recognizable and helps it stand out in a saturated market.

In addition to the design the integrity and connective nature from each of the technologies at work fascinates me. From front end to system Propel is connected by the sole purpose of user experience. From writing my own jQuery plugin to developing sophisticated member grouping I feel that Propel's features work in tandem for the benefit of the user.

Testing Propel's features was an incredibly gratifying section of the assignment. Seeing the project render on legacy browsers beautifully and read fluently on screen readers has instilled a sense of robustfulness across the board.

Looking back there are several features I would have approached differently that would have saved time and resources. I feel that the dialog messages function(main.js) is overkill, at the time it was thought for scalability this would be a remarkable feature but in truth they aren't used nearly enough to warrant its complexity.

I am pleased with the decision to have removed Angular.js from the roster of technologies after reflecting on some of the jQuery functionality included. Angular would have only been used for template routing which would have added an extra HTTP request and a layer of unnecessary development.

It was quite a let down that I wasn't able to fully implement custom fields— although they still function and working as intended It would have been much more satisfying to run them off my own code. I can't totally blame myself, channel form is a relatively new module added to Expression Engine and I'd imagine this functionality will be included in future versions.

## 9.2 Looking to the future

With a few extra features I feel that Propel has the ability to contend with some of its competitors and also offer an alternative for local businesses to advertise their services. I'd firstly like to implement custom email marketing templates as this was an original intention that moved from priority to optional feature as the project evolved.

In the future i'd like to use Solspace's addon 'Member', for the account settings section and style it based on Propel's styleguide. This would further improve the brand equity Propel amasses.

Luminosity was an additional feature mentioned previously that I wanted to implement into Propel. Although browser support is low it is a feature than can substantially help those with poor reading visibility under synthetic lighting. Again this feature moved swiftly down the list of extra features possibly implemented.

I feel that I have pushed Expression Engine to it's limits outside of writing custom modules. Whilst I still feel it is one of the best CMS' for creating information heavy websites I'd like to move to Craft for future development. This is because of it's beautiful control panel and extra features that Expression Engine requires plugins for.

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## 11.0 Appendices

Background resources, Additional information, Lengthy detail for reference, Not the other reports

### 11.1.1 Waterfall Methodology

The Waterfall Model was first Process Model to be introduced. It is also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases.

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### 11.1.2 Search Features:

- Select any combination of categories;
- Limit entries by a given distance based on latitude/longitude values;
- Target specific fields, including Titles and Grid/Matrix columns;
- Define numeric or date ranges;
- Filter based on an entry's relationship with other entries;
- Filter by tags, using either SolSpace Tag or DevDemon Tagger;
- Filter by Store properties, using the separate Low Search Store filter;
- Search SolSpace Calendars and Events with Low Search Calendar.
- Keyword searches are accent and diacritic insensitive;
- Multiple site search;
- Search shortcuts for custom search queries;
- An exportable search log;
- A super powerful Find & Replace utility;
- A field type API and several extension hooks for developers.

### 11.1.3 Embed Widget

Like many social media services, embedded widgets allow you to bring a piece of your online identity from one site to another. Propel will have this same functionality allowing Experts to copy and paste a block of code to display their listing's attributes externally. The embed widget will be displayed within an iFrame where their rating, services, profile image and number of bookmarks they have received. This will be located within the Account section for Experts to use.

### 11.1.4 High Fidelity Wire frames

Get Started its ABSOLUTELY FREE  
NO CREDIT CARD NEEDED



ALREADY HAVE AN ACCOUNT?  
SIGN IN →

SIGN IN

USERNAME OR EMAIL

PASSWORD

  Show

SIGN IN →

REMEMBER ME

CREATE AN ACCOUNT

TROUBLE LOGGING IN?

### 11.1.5 Functional Requirements

**Requirement:** #011 Pagination

**Description:** Users will have the ability to load in more entries based as pages

**Rational:** To neatly house entries and combat slow loading pages.

**Dependencies:** Expression Engine Pagination Module

**Requirement:** #012 Member Assets

**Description:** Upgraded users that upload images to their listing will have the ability to use all of the assets they have previously added and newly uploaded assets specific to their account.

**Rational:** Keeping content separate for members will allow users to sort and prepare their assets for a better user experience.

**Dependencies:** Expression Engine Member Module, #001, #002, #003.

**Requirement:** #013 Form Validation

**Description:** When posting forms some fields may be a requirement such as a title, if this is left un-checked the user will be prompted to fill this field in even if JavaScript is turned off.

**Rational:** Ensures that empty fields aren't posted to the database that could cause bugs with functionality.

**Dependencies:** Expression Engine, jQuery Validate.

**Requirement:** #014 Screen Reader Accessibility

**Description:** Visually impaired users use browsers that read web pages and as such requires content to be structured so that this not only makes sense but navigates in a similar if not identical fashion to normal browsing conditions.

**Rational:** Greater accessibility allows Propel to cater for all it's users regardless of viewing method.

**Dependencies:** Expression Engine, HTML5 ARIA.

**Requirement:** #015 Responsive Navigation Menu

**Description:** Users who view Propel from a mobile device will navigate the site via a menu panel to make good use of spacing.

**Rational:** A menu panel saves space and is native to mobile applications.

**Dependencies:** jQuery, CSS3, HTML5

**Requirement:** #016 Responsive layout

**Description:** As users come from various devices with an array of screen sizes Propel's layout will shift and change to accommodate their requirements.

**Rational:** Ensuring all round accessibility to paramount of Propel's values.

**Dependencies:** jQuery, CSS, HTML5

**Requirement:** #017 Expression Engine Install

**Description:** Expression Engine will act as the housing component of our content and also power the membership functionality. EE requires an install on a server where PHP has been installed.

**Rational:** Expression Engine is Propel's CMS of choice.

**Dependencies:** Expression Engine, PHP, MYSQL, a server

**Requirement:** #018 Mailing List

**Description:** Users will have the ability to sign up to a mailing list to hear the latest blog entries and news from Propel.

**Rational:** To generate interest and market Propel's unique services whilst building an audience of users of which to send tailored emails to.

**Dependencies:** HTML, jQuery, CSS, Mailchimp API

**Requirement:** #019 Email Templates

**Description:** Users will be sent emails that represent Propel as such templates will be beautifully built with compatibility to clients in mind.

**Rational:** To bolster Propel's branding guidelines and increase it's reach to customers.

**Dependencies:** HTML, Mailchimp API

**Requirement:** #020 Listing Reviews

**Description:** Allow users to comment on existing listings

**Rational:** To encourage community discussion and generate interest.

**Dependencies:** HTML, Expression Engine, jQuery Validate, CSS

**Requirement:** #021 Search Listings

**Description:** Users will have the ability to search through listings and filter them by category.

**Rational:** Allows users to find with ease the listing they are searching for.

**Dependencies:** HTML, jQuery, CSS, Expression Engine, Low Search Plugin

**Requirement:** #022 Blog Archive, Categories and Search

**Description:** Users will have the ability to search through blog posts and filter them by category or archived date.

**Rational:** Allows users to find with ease the blog posts they are searching for.

**Dependencies:** HTML, jQuery, CSS, Expression Engine

**Requirement:** #023 Blog Pagination

**Description:** Users will load in more blog posts instead of filtering through expensive numbers of entries

**Rational:** Allows users to navigate through the blog without loading many entries.

**Dependencies:** HTML, jQuery, CSS, Expression Engine, AJAX, PHP

**Requirement:** #024 Legal document templates

**Description:** A reusable template for legal documentation based on Propel's guidelines, privacy and accessibility

**Rational:** Legal requirements should be easy to navigate.

**Dependencies:** HTML, jQuery, CSS, Expression Engine

**Requirement:** #025 Login with Facebook

**Description:** Instead of registering with Propel users will have the ability to log in with facebook

**Rational:** Does not deter users that do not wish to register from using Propel.

**Dependencies:** Expression Engine, Social Login Pro

### 11.1.6 Wireframes

REGISTER

You ARE SIGNING UP AS AN AGENCY  
& WHAT IS THIS?

AGENCY NAME

EMAIL

PASSWORD

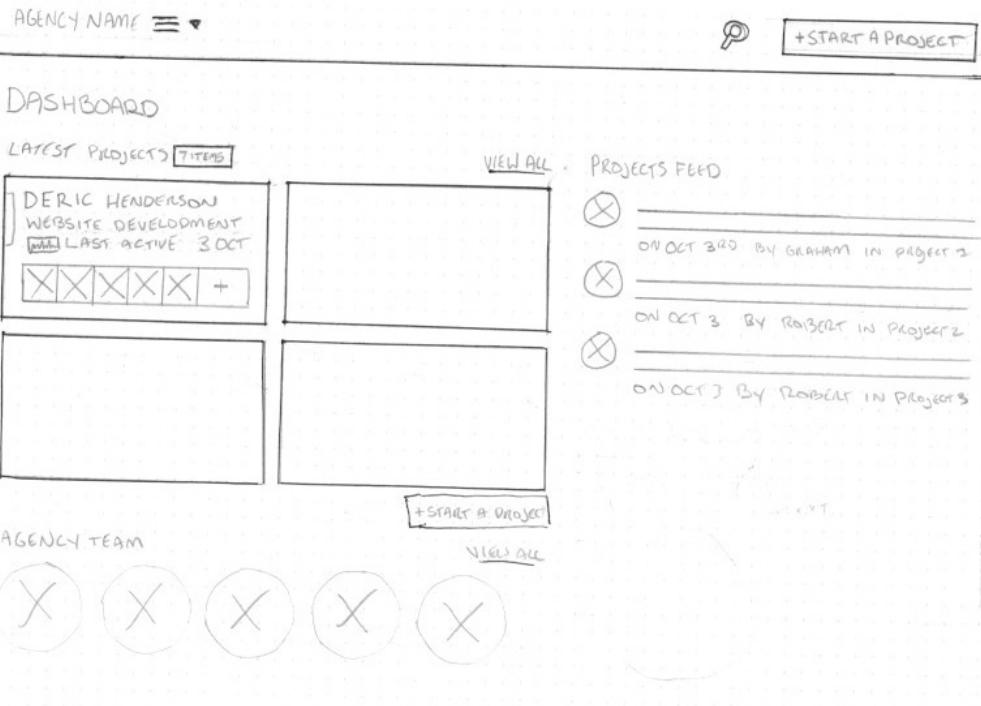
REGISTER AS A CLIENT OR CREATIVE

← BACK TO HOMEPAGE

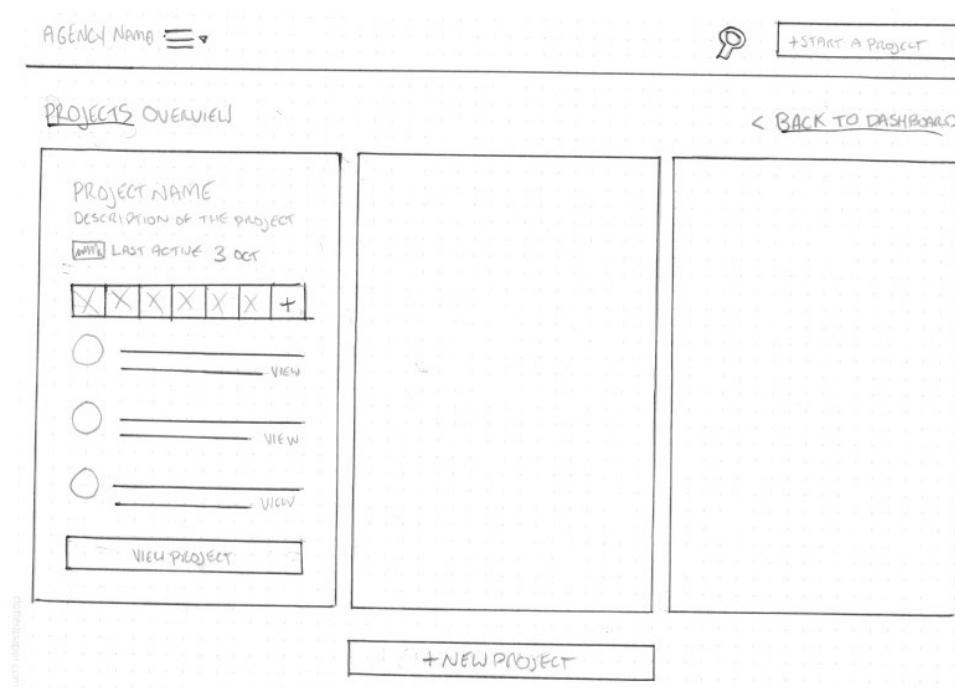
THANKS FOR REGISTERING!  
NOW LET'S GET STARTED...



← BACK TO HOMEPAGE  
STARTER GUIDE



## 6.0 Project Overview



AGENCY NAME 

 + START A PROJECT

PROJECT CREATION

DASHBOARD / PROJECT CREATION

② NAME PROJECT      ④ ADD TEAM      ③ INVITE CLIENTS(S)

NAME YOUR PROJECT

PROJECT NAME 

ADD YOUR TEAM > 

< BACK TO PROJECT OVERVIEW

AGENCY NAME 

 + START A PROJECT

PROJECT CREATION

DASHBOARD / PROJECT OVERVIEW / PROJECT CREATION

② NAME PROJECT      ④ ADD TEAM      ③ INVITE CLIENTS

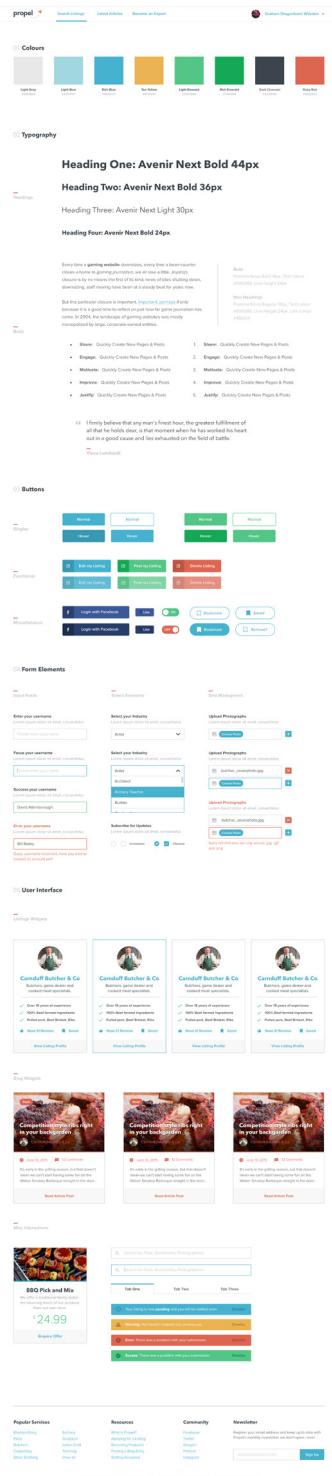
INVITE YOUR TEAM  
WHO'S WORKING ON THIS PROJECT?

| AGENCY NAME      | COLLABORATING |
|------------------|---------------|
| TOM CLACEY +     | ANDY CLARKE - |
| GRAHAM WILSON +  |               |
| ROBERT PAULSON + |               |
| JERRY LANG +     |               |
| GRANT MITCHEL -  |               |

INVITE CLIENTS → 

< ADD MORE TEAM MEMBERS

### 11.1.3 Design Concepts



A comprehensive styleguide that covers colour, typography, buttons, form elements and user interface. Each element has been styled in accordance to compliment the Propel brand.

The screenshot displays the Propel homepage, which is a dynamic hub for local businesses. Key features include:

- Top Bar:** Includes the Propel logo, search bar, latest articles, and a 'Become an Expert' button.
- Hero Section:** Features a large image of a person working outdoors with the text 'Find handpicked experts in your area' and a 'Join for Free' button.
- Featured Listings:** Shows four instances of 'Cardiff Butcher & Co' with their profiles and reviews.
- Become an Expert:** A process diagram with three steps: 'Apply for a Listing', 'Publish your Business', and 'Attract Customers', each with a brief description and a 'View Listing Profile' button.
- Use Propel anywhere:** Shows how the platform can be accessed from various devices (laptop, tablet, smartphone).
- Latest Articles:** Displays three articles about grilling ribs.
- Footer:** Includes links for popular services, resources, community, and newsletter sign-up.

Propel's homepage is a directive and dynamic hub overarching to the entire site. Each modular section flows the user to their desired destination.

The screenshot shows the Propel search listings page. At the top, there's a banner with the text "Find services in your area" and a search bar containing "Pizza, Blacksmiths, Photographers". Below the banner, there's a section titled "Featured Listings" featuring four identical entries for "Carnduff Butcher & Co". Each entry includes a profile picture of a man in a green apron, the company name, a brief description ("Butchers, game-dealer and cooked meat specialists."), a list of three bullet points (experience, ingredients, products), and two buttons: "Read 31 Reviews" and "Saved". Below this, there's a section titled "Latest Articles" with three cards for "Competition style ribs right in your backgarden" by "Carnduff Butchers & Co". Each card shows a thumbnail of the ribs, the article title, the author, the date (June 13, 2015), the number of comments (12), and a "Read Article Post" button.

**Popular Services**

Blacksmithing  
Pizza  
Butchers  
Carpentry  
Silver Smithing

Archery  
Sculpture  
Italian Craft  
Tailoring  
View all

**Resources**

What is Propel?  
Applying for a Listing  
Becoming Featured  
Posting a Blog Entry  
Getting Accepted

**Community**

Facebook  
Twitter  
Google+  
Pinterest  
Instagram

**Newsletter**

Register your email address and keep up to date with Propel's monthly newsletter, we don't spam - ever.

**Sign Up**

The search listings page instantly directs the user to begin browsing the site's content followed by some of it's featured representatives.

**propel** Search Listings Latest Articles Become an Expert Graham Dragonborn Wilsdon ▾

### Your search for **Butchers**

Returned 24 results [Back to Search](#)


**Carnduff Butcher & Co**  
 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


**Carnduff Butcher & Co**  
 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


**Carnduff Butcher & Co**  
 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


**Carnduff Butcher & Co**  
 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


**Carnduff Butcher & Co**  
 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


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 Butchers, game dealer and cooked meat specialists.  

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[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


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[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


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- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


**Carnduff Butcher & Co**  
 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


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 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
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- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

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[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)


**Carnduff Butcher & Co**  
 Butchers, game dealer and cooked meat specialists.  

- ✓ Over 15 years of experience
- ✓ 100% Beef farmed Ingredients
- ✓ Pulled pork, Beef Brisket, Ribs

[Read 31 Reviews](#) [Saved](#)

[View Listing Profile](#)

Page 1 of 3: 1 2 3 4

| Popular Services   | Resources  | Community  | Newsletter   |
|--|--|--|--|
| <a href="#">Blacksmithing</a><br><a href="#">Pizza</a><br><a href="#">Butchers</a><br><a href="#">Carpentry</a><br><a href="#">Silver Smithing</a> | <a href="#">Archery</a><br><a href="#">Sculpture</a><br><a href="#">Italian Craft</a><br><a href="#">Tailoring</a><br><a href="#">View all</a> | <a href="#">What is Propel?</a><br><a href="#">Applying for a Listing</a><br><a href="#">Becoming Featured</a><br><a href="#">Posting a Blog Entry</a><br><a href="#">Getting Accepted</a> | <a href="#">Facebook</a><br><a href="#">Twitter</a><br><a href="#">Google+</a><br><a href="#">Pinterest</a><br><a href="#">Instagram</a> |

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An overview of propel's search results—modular content that stacks allows users to quickly scan and find their desired listing. Pagination works best over auto loading as users can direct to the footer if needs be.

**Carduff Butchers & Co**  
Butchers, game dealer and cooked meat specialists.

**Specialties Include**

- Packing & moving helpers
- Real estate showing preparation
- Organizing Estate Sales
- Packing & Moving Items into Storage
- Heavy-duty or Hoarder clean outs
- Packing & moving helpers
- Real estate showing preparation
- Organizing Estate Sales
- Packing & Moving Items into Storage
- Heavy-duty or Hoarder clean outs

**Address:** 19 Conwy Square Newtownards, BT19 5AJ  
**Telephone:** +44 (0) 28 9181 2169  
**Opening Hours:** 9am–5pm Monday to Friday  
**Website:** <http://www.carduffbutchersards.co.uk>  
**Facebook:** [Visit Facebook Page](#)

**Get in touch** Or View our Offers

**A local family run butchers with over 30 years experience**

Every time a gaming website downsize, every time a been-courier closes a home to gaming journalism, we all lose a little. Joyto's closure is by no means the first of its kind, news of sites shutting down.

Downsizing staff moving have been at a steady beat for years now. With wide variety of top-class meat and friendly service you can be sure we are highly recommended.

**Special Offers**

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
| BBQ Pick and Mix<br>We offer a traditional family butchers sourcing much of our produce from our own farm.<br>£24.99 | BBQ Pick and Mix<br>We offer a traditional family butchers sourcing much of our produce from our own farm.<br>£24.99 | BBQ Pick and Mix<br>We offer a traditional family butchers sourcing much of our produce from our own farm.<br>£24.99 | BBQ Pick and Mix<br>We offer a traditional family butchers sourcing much of our produce from our own farm.<br>£24.99 |
| <a href="#">Enquire Offer</a>  | <a href="#">Enquire Offer</a>  | <a href="#">Enquire Offer</a>  | <a href="#">Enquire Offer</a>  |

**Customer Reviews**

[Login to Review](#)

Graham Dragoborn Wilson | January 26, 2015  
Absolutely fantastic meat, great prices and phenomenal service. The staff go the extra mile to meet your needs and inform you of the current great offers. I recommend the pulled pork with their apple coleslaw!

Graham Dragoborn Wilson | January 26, 2015  
Absolutely fantastic meat, great prices and phenomenal service. The staff go the extra mile to meet your needs and inform you of the current great offers. I recommend the pulled pork with their apple coleslaw!

Graham Dragoborn Wilson | January 26, 2015  
Absolutely fantastic meat, great prices and phenomenal service. The staff go the extra mile to meet your needs and inform you of the current great offers. I recommend the pulled pork with their apple coleslaw!

[Load More Reviews](#)

**Testimonials**

"Emily believe that any man's finest hour, the greatest fulfillment of all that he holds dear, is that moment when he has worked his heart out in a good cause and lies exhausted on the field of battle."

Vince Lombardi, Newtowwards

• ○ ○

**Popular Services**

- Blacksmithing
- Platz
- Butchers
- Cleaning
- Shoe Smithing
- Archery
- Sculpture
- Balcony Craft
- Tutoring
- View all

**Resources**

- What Is Propel?
- Applying for a Listing
- Becoming Featured
- Reading & Blog Entry
- Getting Accepted

**Community**

- Facebook
- Twitter
- Google+
- Pinterest
- Instagram

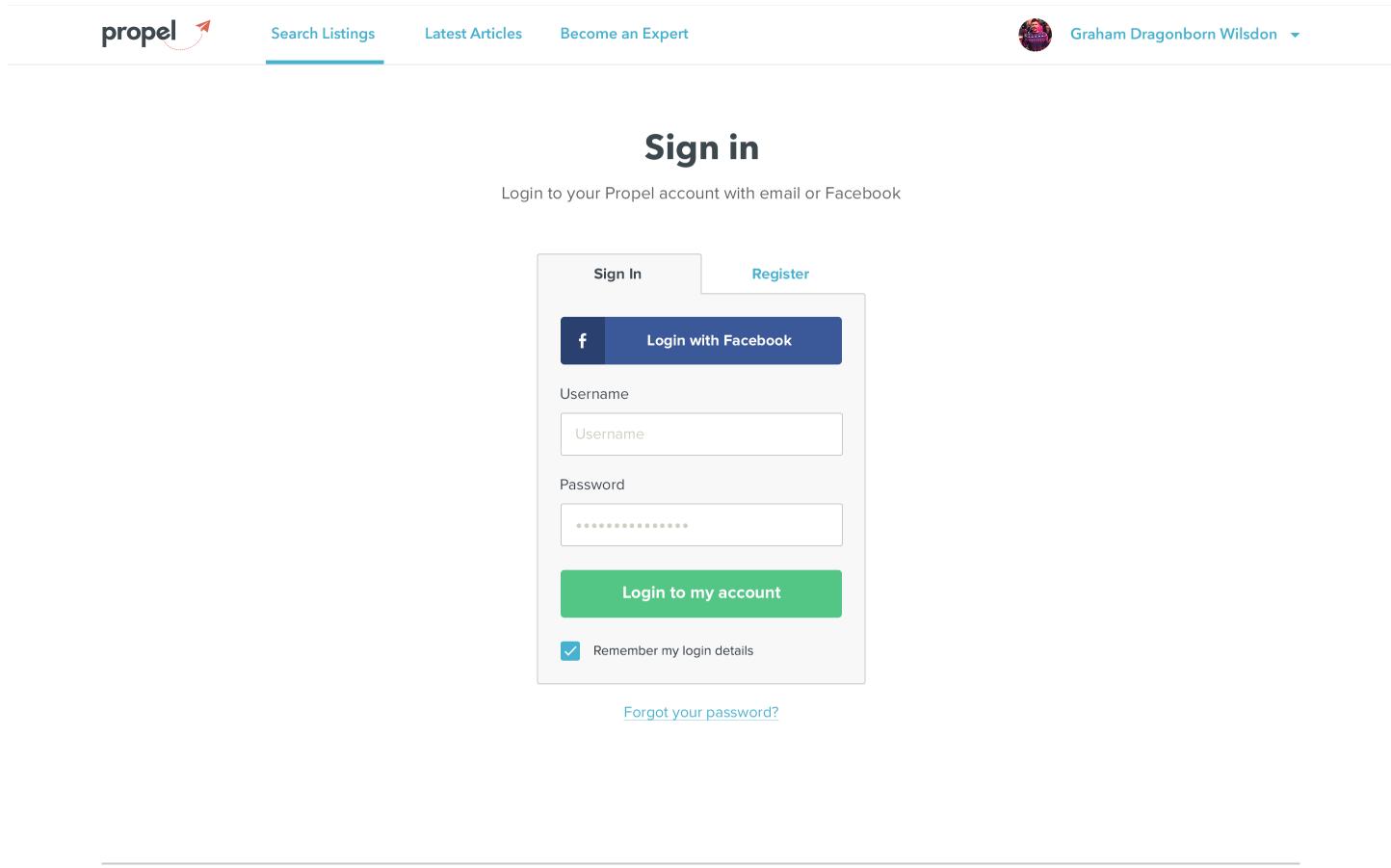
**Newsletter**

Register your email address and keep up to date with Propel's monthly newsletter, we don't spam—ever.

[example@theweb.com](#) [Sign Up](#)

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Listings are comprehensive and structured base on hierarchy of content. Content is kept concise to prevent input style breaking and is modular to allow for lack of data. Testimonials sit along side customer reviews to further promote businesses. An AJAX load more button allows users to request more reviews and build trust to the local business.



The screenshot shows the Propel website's sign-in page. At the top, there is a navigation bar with the Propel logo, a search bar labeled "Search Listings", and links for "Latest Articles" and "Become an Expert". On the right side of the navigation bar, there is a user profile picture and the name "Graham Dragonborn Wilsdon" with a dropdown arrow.

The main content area has a title "Sign in" and a subtitle "Login to your Propel account with email or Facebook". Below this, there is a form with two tabs: "Sign In" (selected) and "Register". A "Login with Facebook" button is prominently displayed. The "Sign In" form includes fields for "Username" and "Password", both with placeholder text. A green "Login to my account" button is at the bottom, followed by a "Remember my login details" checkbox and a "Forgot your password?" link.

| Popular Services                | Resources                              | Community                 | Newsletter  |
|---------------------------------|--|---------------------------|---|
| <a href="#">Blacksmithing</a>   | <a href="#">Archery</a>                | <a href="#">Facebook</a>  | Register your email address and keep up to date with Propel's monthly newsletter, we don't spam—ever. |
| <a href="#">Pizza</a>           | <a href="#">Sculpture</a>              | <a href="#">Twitter</a>   |   |
| <a href="#">Butchers</a>        | <a href="#">Italian Craft</a>          | <a href="#">Google+</a>   |   |
| <a href="#">Carpentry</a>       | <a href="#">Tailoring</a>              | <a href="#">Pinterest</a> |   |
| <a href="#">Silver Smithing</a> | <a href="#">View all</a>               | <a href="#">Instagram</a> |   |
|                                 | <a href="#">What is Propel?</a>        |                           |   |
|                                 | <a href="#">Applying for a Listing</a> |                           |   |
|                                 | <a href="#">Becoming Featured</a>      |                           |   |
|                                 | <a href="#">Posting a Blog Entry</a>   |                           |   |
|                                 | <a href="#">Getting Accepted</a>       |                           |   |

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Clear call to actions and input fields let the user navigate with ease and process logging in. Facebook is the primary driver for accounts and thus is first choice in order of importance. An extra register tab on the top right helps guide the user to the correct place if needs be.

Your listing stats for **Carnduff Butcher & Co**

1244 Page Views    112 Bookmarks    31 Reviews

**Your recent reviews**

- Graham Dragonborn Wilsdon January 26, 2015
 

Absolutely fantastic meat, great prices and phenomenal service. The staff pander to your every need and inform you of the current great offers. I recommend the pulled pork with their apple coleslaw!
- Graham Dragonborn Wilsdon January 26, 2015
 

Absolutely fantastic meat, great prices and phenomenal service. The staff pander to your every need and inform you of the current great offers. I recommend the pulled pork with their apple coleslaw!
- Graham Dragonborn Wilsdon January 26, 2015
 

Absolutely fantastic meat, great prices and phenomenal service. The staff pander to your every need and inform you of the current great offers. I recommend the pulled pork with their apple coleslaw!

**Saved listings**

- Carnduff Butcher & Co**

Butchers, game dealer and cooked meat specialists.
- Carnduff Butcher & Co**

Butchers, game dealer and cooked meat specialists.
- Carnduff Butcher & Co**

Butchers, game dealer and cooked meat specialists.

| Popular Services   | Resources  | Community  | Newsletter   |
|--|--|--|--|
| <a href="#">Blacksmithing</a><br><a href="#">Pizza</a><br><a href="#">Butchers</a><br><a href="#">Carpentry</a><br><a href="#">Silver Smithing</a> | <a href="#">Archery</a><br><a href="#">Sculpture</a><br><a href="#">Italian Craft</a><br><a href="#">Tailoring</a><br><a href="#">View all</a> | <a href="#">What is Propel?</a><br><a href="#">Applying for a Listing</a><br><a href="#">Becoming Featured</a><br><a href="#">Posting a Blog Entry</a><br><a href="#">Getting Accepted</a> | <a href="#">Facebook</a><br><a href="#">Twitter</a><br><a href="#">Google+</a><br><a href="#">Pinterest</a><br><a href="#">Instagram</a> <p>Register your email address and keep up to date with Propel's monthly newsletter, we don't spam—ever.</p> <input type="text" value="example@example.com"/> <a href="#">Sign Up</a> |

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The drop down menu is more efficient than a sliding panel due to the number of options available. A modular page rather than a control panel has been designed due to the content's nature and flowing approach. Statistics give tangible feed back to the expert and let them know how their listing is performing.

The screenshot shows the 'Become an Expert' section of the Propel website. At the top, there's a navigation bar with links for 'Search Listings', 'Latest Articles', and 'Become an Expert'. A user profile for 'Graham Dragonborn Wilsdon' is also visible. Below the title 'Become an Expert', there's a sub-instruction: 'Interested in having your business listed on Propel? Fill us in on the story so far to be accepted.' Three green circles numbered 1, 2, and 3 are arranged horizontally with dashed arrows indicating a sequential flow. The main form area is titled 'Tell us all about your establishment'. It contains several input fields: 'Name your listing' (with placeholder 'baron's Pizza Parlour'), 'Select your industry' (set to 'Food & Catering'), 'Add Services' (with a plus icon), and 'Describe your expertise' (with placeholder 'Once upon a time...'). A green button at the bottom right of the form says 'Next Step: Contact Details'.

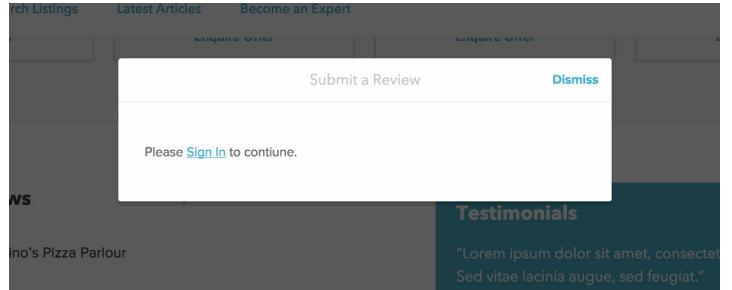
| Popular Services   | Resources  | Community  | Newsletter   |
|--|--|--|--|
| <a href="#">Blacksmithing</a><br><a href="#">Pizza</a><br><a href="#">Butchers</a><br><a href="#">Carpentry</a><br><a href="#">Silver Smithing</a> | <a href="#">Archery</a><br><a href="#">Sculpture</a><br><a href="#">Italian Craft</a><br><a href="#">Tailoring</a><br><a href="#">View all</a> | <a href="#">What is Propel?</a><br><a href="#">Applying for a Listing</a><br><a href="#">Becoming Featured</a><br><a href="#">Posting a Blog Entry</a><br><a href="#">Getting Accepted</a> | <a href="#">Facebook</a><br><a href="#">Twitter</a><br><a href="#">Google+</a><br><a href="#">Pinterest</a><br><a href="#">Instagram</a> |

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Breaking the form down into three parts gives the illusion of less fields to be filled in and lets the user know their progression. Keeping inline with branding assets lets Propel build brand equity with the motif's dotted line. Single file form elements help guide the user onto the call to action.

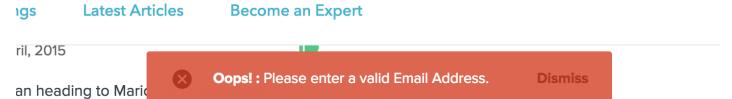
## 11.1.6 Propel's Custom Lightbox jQuery Plugin

```
//Graham Wilsdon's AJAX Modal box plugin for Propel's content @grahamwilsdon
(function($){
    //initialize plugin
    $.fn.propelmodal = function(prop){
        // Default parameters
        var options = $.extend({
            title: "Hi there",
            type: "message",
            content: "",
            form: "login",
            ajax: ""
        },prop);
        return this.click(function(e){
            modal_box();
            e.preventDefault();
        });
        function modal_box(){
            if (options.content){
                var modalContents = $(options.content).html();
            }
            //Create HTML markup
            var modalMarkup = '<section class="modal '+options.type+'><div class="modal-overlay"></div>';
            //Add
            if ($('.modal-overlay').length == 0){
                $('body').append(modalMarkup);
                modal_centre();
                $('.div.modal-window').addClass('fastimated fadeInDown');
            }
            //if
            $(document).on('click', '.modal-close, .modal-overlay', function(e){
                $('.section.modal').remove();
                e.preventDefault();
            });
            //click
            //Dragable Functionality, Thanks to Tovic for his JS Fiddle: http://jsfiddle.net/tovic/
            var $dragging = null;
            $('body').on("mousedown", ".modal-header", function(e) {
                //Find the parent and add the relevant classes instead of the clicked elements
                $(this).parent().attr('unselectable', 'on').addClass('draggable');
                var el_w = $(this).draggable().outerWidth(),
                    el_h = $(this).draggable().outerHeight();
                $('body').on("mousemove", function(e) {
                    if ($dragging) {
                        $dragging.offset({
                            top: e.pageY - el_h / 2,
                            left: e.pageX - el_w / 2
                        });
                    }
                });
                //Wee change on my part: Makes sure that you aren't dragging random elements inside
                $dragging = $('.modal-window');
            }).on("mouseup", ".draggable", function(e) {
                $dragging = null;
            });
        });
    };
    //Modal
    $('.post-comment-call').propelmodal({
        title: "Submit a Review",
        content: '.modal-contents .comment-grab'
    });
    //propelmodal
    //Comment scripting
    $('.edit_link').click(function(e){
        ...
    });
});
```



## 11.1.7 Propel's user dialog messages

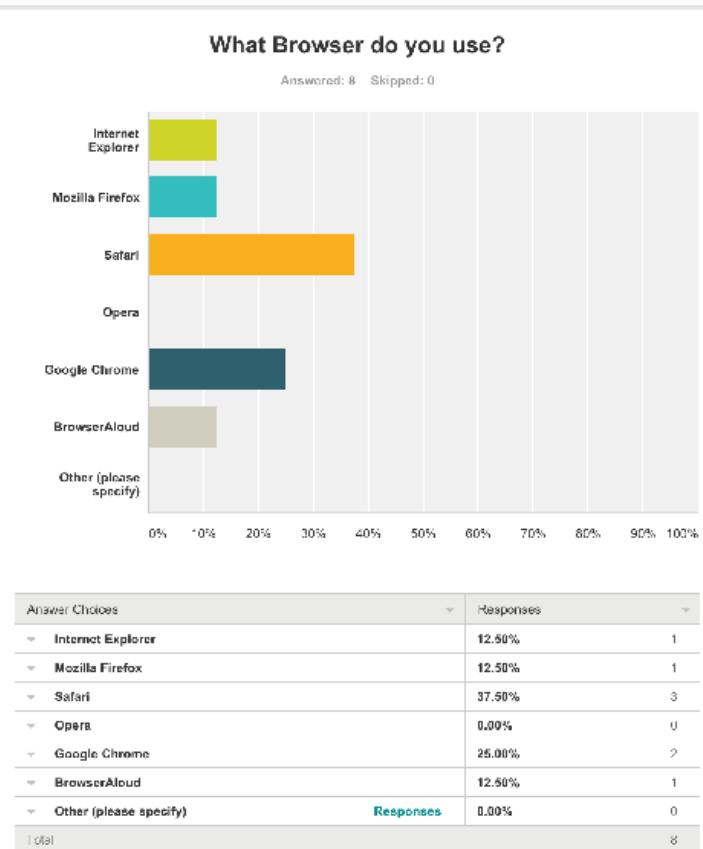
```
function SystemMessages(message_id, message_type, message_content){
    if (message_type && message_content){
        //Custom Info Message
        var content = message_content;
        var type = message_type;
        $('body').append('<aside class="messages"><div class="message '+type+'><p><i class="fa fa-times" style="float: right; margin-top: -10px;"></i>' + content + '</div></aside>');
        $('.message').addClass('fadeInDown fastimated');
    }else{
        //Get Message Information
        $.getJSON('js/messages.json',function(data){
            //filter through json items
            $.each(data.messages, function(key, val) {
                if (val.message[0].id == message_id){
                    var id = message_id;
                    var content = val.message[0].content;
                    var type = val.message[0].type;
                    $('body').append('<aside class="messages"><div class="message '+type+'><p>' + content + '</div></aside>');
                }
            });
            //each
            $('.message').addClass('fadeInDown fastimated');
        });
        //Conditional
    }
    //System Messages
    //Scrollto-function
}
```

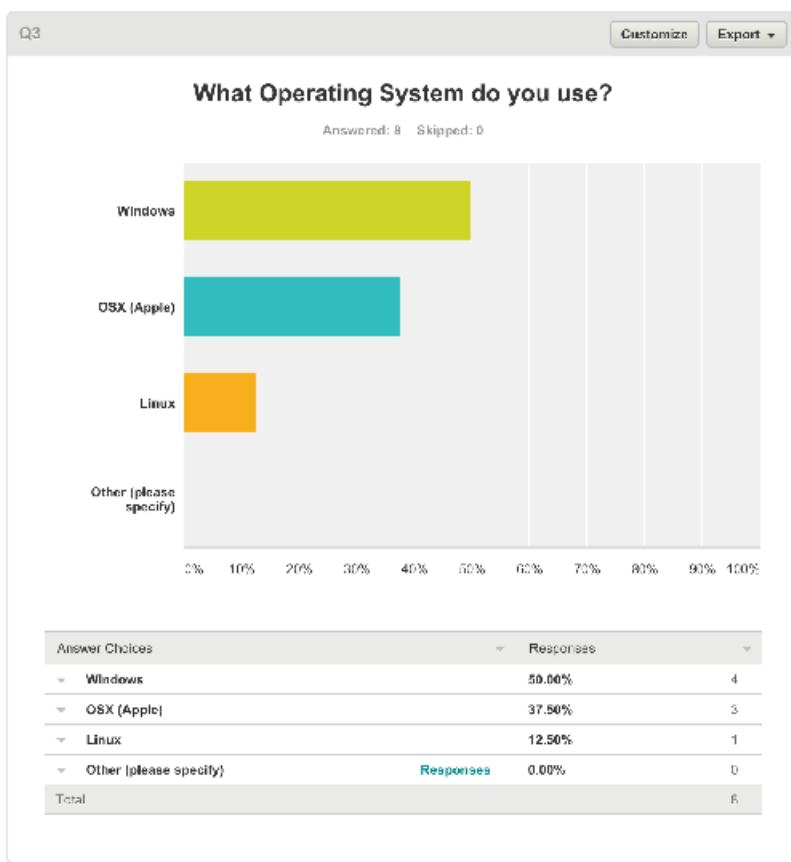
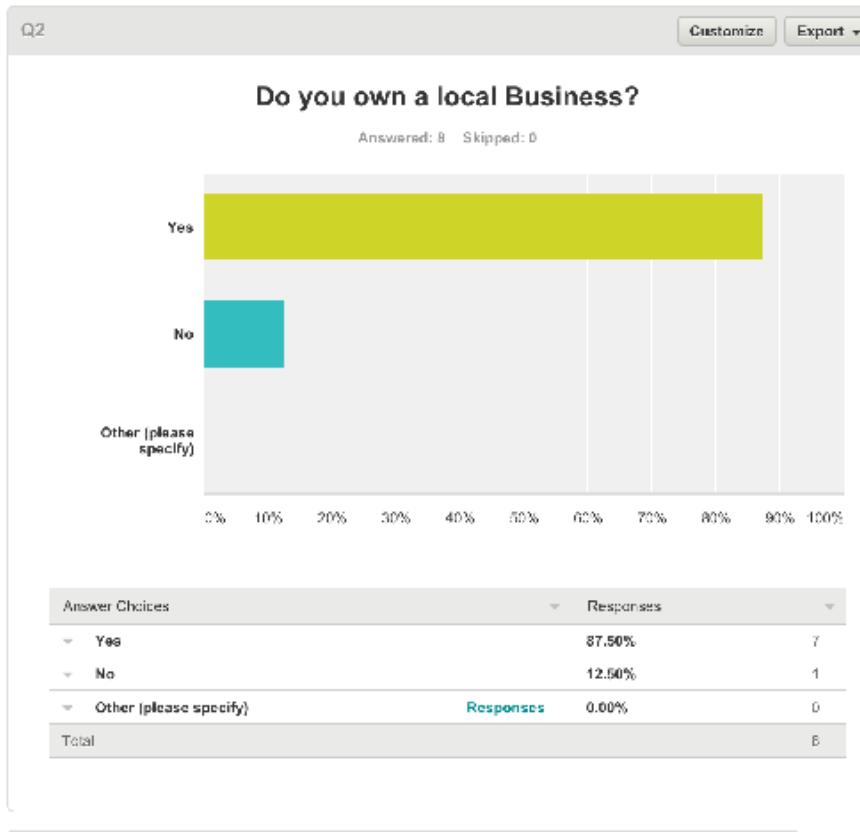


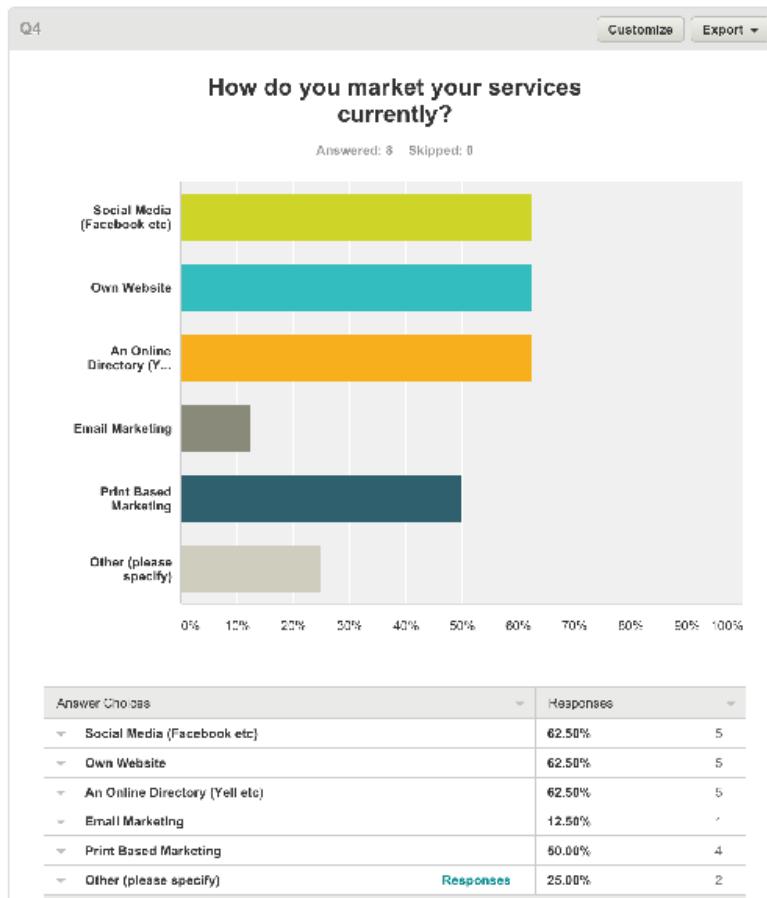
```
{
    "messages": [
        {"message": {
            "id": 1,
            "type": "info",
            "content": "<strong>Info</strong>: Your listing is now pending and you will be notified soon."
        }},
        {"message": {
            "id": 2,
            "type": "error",
            "content": "<strong>Oops</strong>: There was a problem with your submission."
        }},
        {"message": {
            "id": 3,
            "type": "warning",
            "content": "<strong>Warning</strong>: Without Services it's more difficult to find you."
        }},
        {"message": {
            "id": 4,
            "type": "success",
            "content": "<strong>Success!</strong>: Your Listing has been updated."
        }}
    ]
}
```

### 11.1.8 Survey Results

A survey has been carried out to refine Propel's target audience and to hear opinions on functionality, preferences and general user experience. The survey was deployed through SurveyMonkey.com and sent to various business owners to answer.







### 11.1.9 Email Requests

Hi Graham,

Thanks for the kind words.

If your project is non-public, you can have a copy. But if the project will be live on the 'net on a production site, a license is needed.

Sound fair?

Cheers,

--

Low  
Lodewijk Schutte  
Herensingel 29a  
2315 LZ Leiden  
the Netherlands  
gotolow.com

On Monday 5 January 2015 at 15:14, Graham Wilsdon wrote:

> Hi Lodewijk,  
>  
> My name is Graham Wilsdon, a final year Interactive Multimedia Design student, studying at the University of Ulster. Your add-ons are remarkable and I had the privilege of using them commercially whilst on placement year.  
>  
> I am emailing you to request the use of an Expression Engine add-on  
> called 'Low Search' (<http://gotolow.com/addons/low-search>) for my university major project. As I am sure you are aware it's tough living on a student loan and I simply cannot afford the add-on but would love to incorporate your software into my project's build.  
>  
> I look forward to hearing from you.  
>  
> Thanks  
> All the best  
> -Graham

*[An Email request from the Developer to Lodewijk Schutte requesting a licence for the plugin Low Search]*

Hi Graham,

I can do that for you. Attached is a copy of Favorites. :)

Kelsey Martens  
Software Operations Manager

On Mon, 5 Jan at 4:45 pm , Graham Wilsdon wrote:  
Hi Kelsey,

Thanks for getting back to me, I certainly am but not to be rude, I simply couldn't afford the licence cost at present just for educational purposes and thought I'd chance my arm!

Thanks  
All the best  
-Graham

*[An Email request from the Developer to Solspace requesting a license for the plugin Favorites]*

### 11.2.1 An email response from Kerem Suer

**Kerem Suer**

To: Graham Wilsdon

Re: Hi there!

1 April 2015 17:04

Inbox - grahamwilsdon@me.com 

KS

---

Hey Graham,

Sorry for the super long response time. Propel project looks fucking awesome! I'm interested in your process and the objectives of the project so I can give you better on spot feedback. So far, execution-wise, you've done a stellar job. I'm more interested in your thought process on how you came up with the brand, what values and emotions you're trying to communicate, and how your decisions map the needs of the project. I can do a quick Skype or Hangouts call, let me know when is good.

Cheers,

**Kerem Suer**, Design  
[kerem.co](http://kerem.co)

[See More](#) from Graham Wilsdon