MSIS Project

Agenda

- Project Goals

- Introduction & Demo

- Technology stack

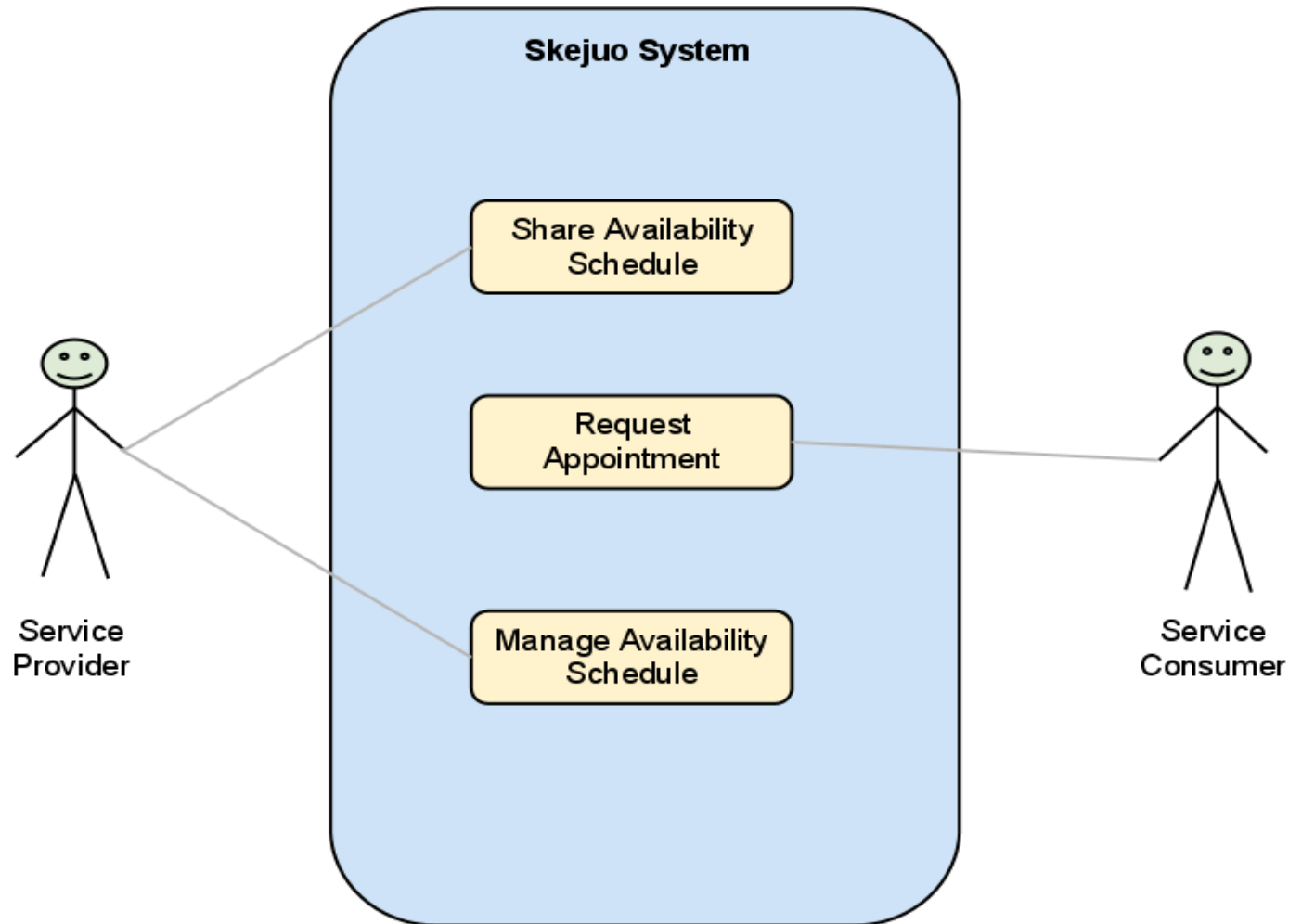- Market Analysis and Opportunity

- Lessons Learned

Project Goals

- Explore the technology stack for deploying a web application on the cloud
  - Produce a functional web service, a finished product

- Market research
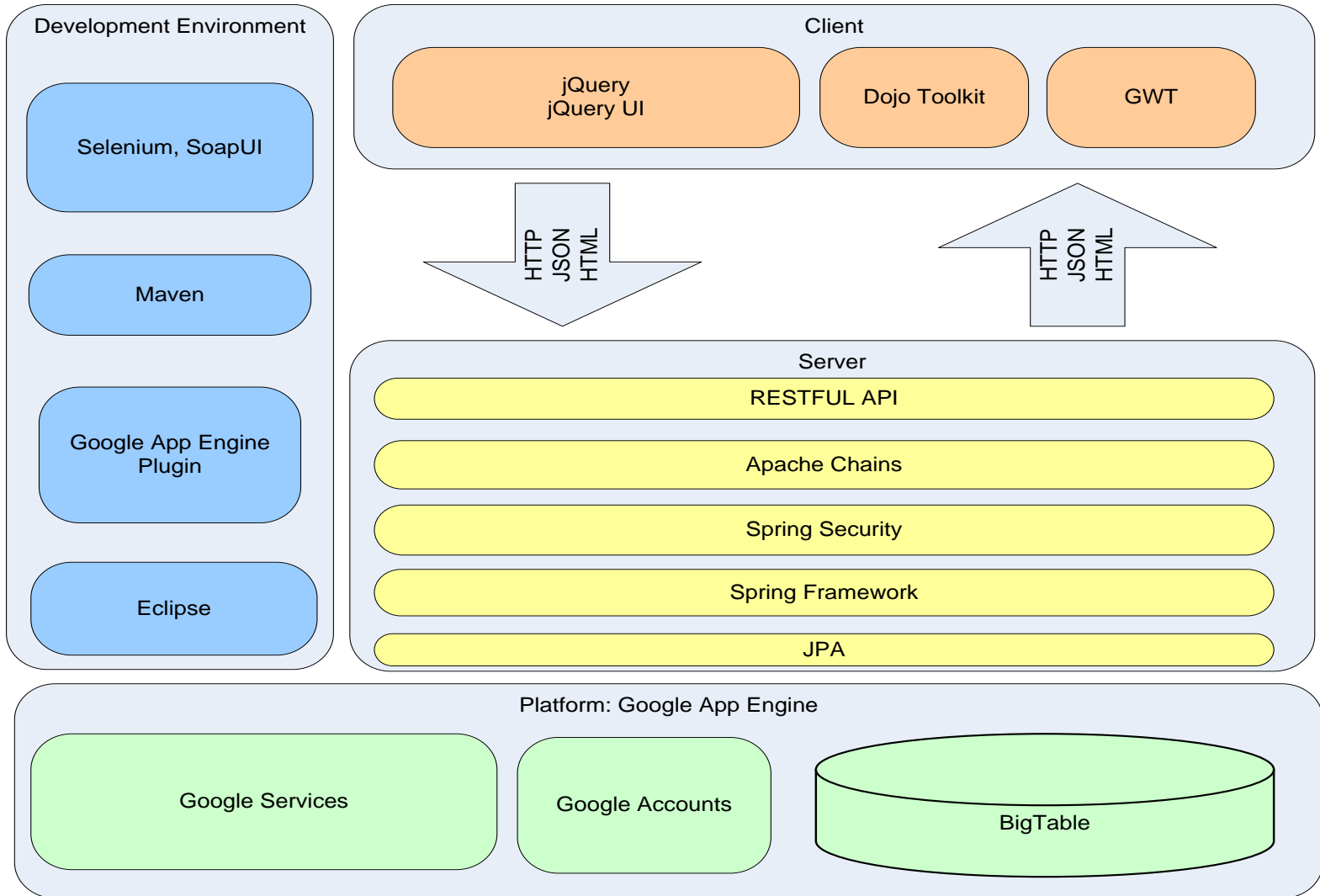 - Find opportunities

What is Skejuo?

- ❑ "Ske – ju – o" is a phonetic spelling of the word schedule

- ❑ Mission: Simplify the way local service providers and service consumers connect with one another

- ❑ Phase 1: scheduling capability
  - ❑ Alleviate the clumsiness of appointment making by phone
  - ❑ Service providers need to be available to take appointments 24/7
  - ❑ Provide a way for service providers to share their availability schedule

- ❑ Web Address: www.skejuo.com

Phase 1: a simple scheduler

Demo

Technology Stack

Development Environment

- Selenium, SoapUI
- Maven
- Google App Engine Plugin
- Eclipse

Client

- jQuery jQuery UI
- Dojo Toolkit
- GWT

HTTP JSON HTML

HTTP JSON HTML

Server

- RESTFUL API
- Apache Chains
- Spring Security
- Spring Framework
- JPA

Platform: Google App Engine

- Google Services
- Google Accounts
- BigTable

Google App Engine

- Platform as a Service

- "Easy to use, easy to scale, and free to get started."

- Pay rent to use Google's infrastructure

- Eliminate barriers for developers to build apps
  - Hardware, server maintenance overhead
  - Deployment, scalability issues, logistics overhead

- Supports Python and Java

- Graduated from "preview" Nov 2011

Google App Engine

- Pros
  - It's free to try
  - Full of features, seemless integration with its public API's
  - Simple and convenient development environment
  - Good ecosystem for developers

- Cons
  - Learning curve
  - Still maturing
  - Java application JVM loading latency

BigTable

- NoSQL
  - A break a way from traditional relational database
  - More de-normalized
  - Less structure, no real schema
  - No joins
  - Google: BigTable, Facebook: Cassandra, MogolDB, etc.

- Very fast, designed to scale

- Need to rethink how we typically do data modeling

Spring Framework

- "Simple thing should be simple, and complex things should be possible." - Alan Kay

- "Unless simple things are simple, complex things are impossible." - Rod Johnson

- Dependency Injection (inversion of control)
  - Central to Spring Framework
  - Objects shouldn't know how to build/get things that it is dependent on
    - e.g. A flashlight object is dependent on a battery object. The flashlight object shouldn't know how to build a battery object, it doesn't matter if it's a duracel or an energizer. It's the responsibility of something else to supply the battery to the flashlight. The flashlight just needs to know that it needs a battery.

The Command Chain Pattern

- Object oriented pattern, also called chain-of-responsibility pattern

- An old pattern popularized by Henry Ford's Assembly Line

- Promotes loose coupling, highly testable, highly repeatable

- Best for linear processing
  - Even for complex, multi threaded applications, execution becomes linear at some level

- Adds complexity, but trade-off for robustness is worth it

The Command Chain Pattern
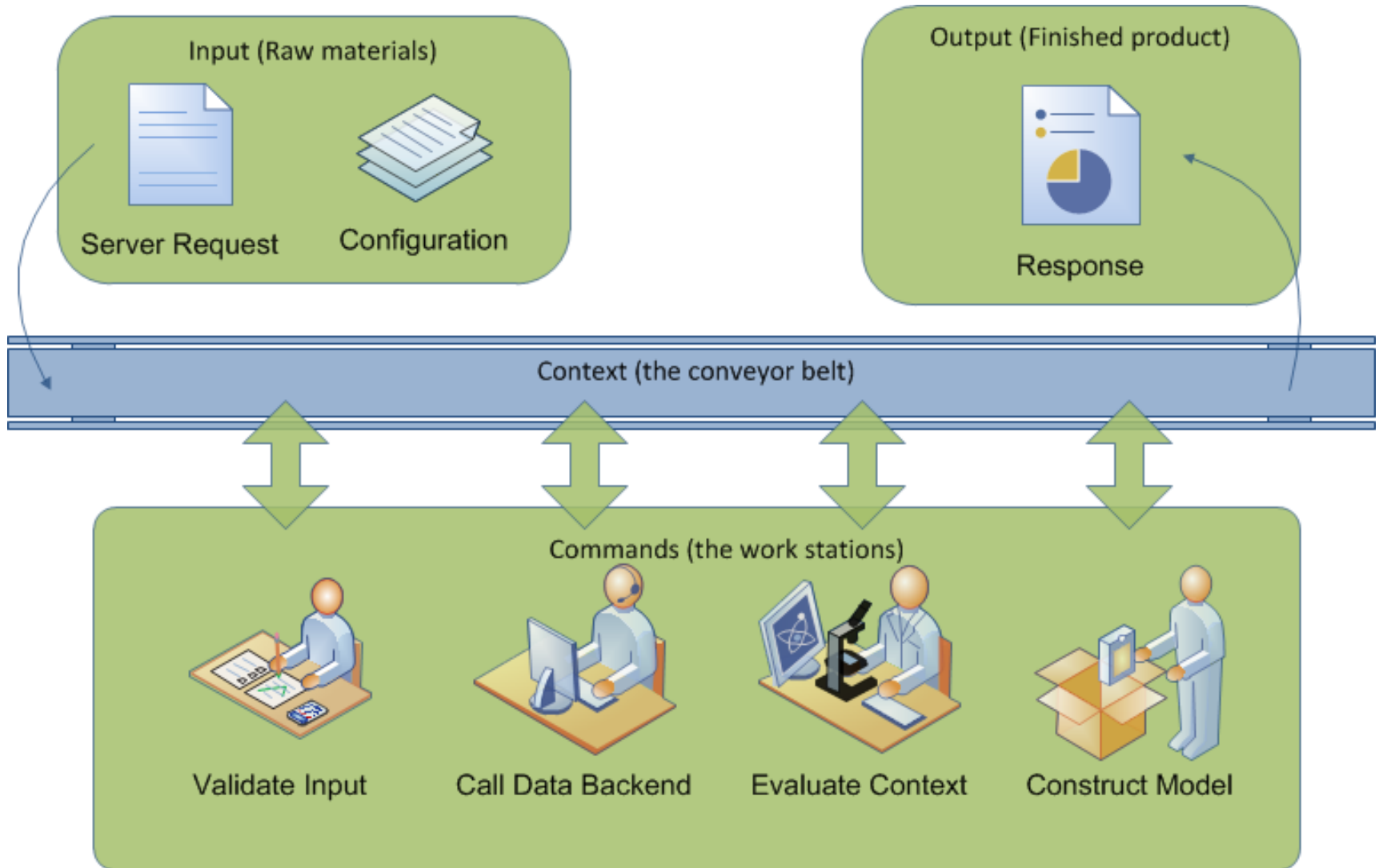
The Command Chain Pattern

- Apache's Commons Chain library implementation

  - Composite Pattern
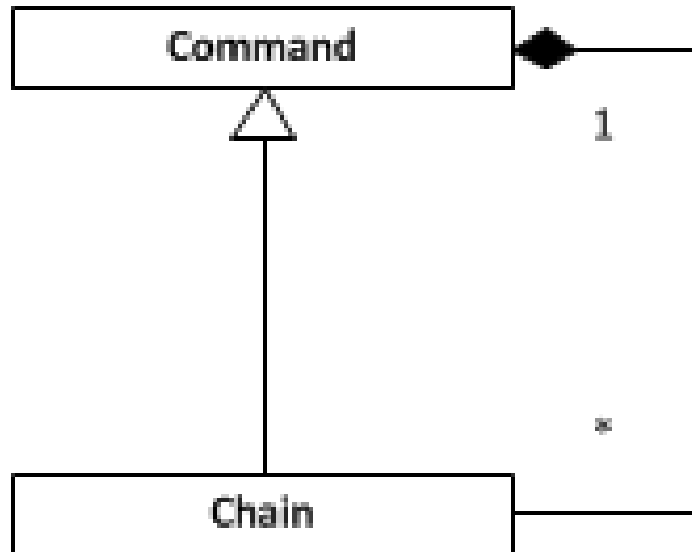
Client side Javascript

- Javascript is a powerful and flexible language that needs to be tamed

- Jquery
  - A web designer's approach

- Dojo
  - A software engineer's approach

- GWT
  - Google's approach

Market Analysis and Opportunities

The market

Tungle.me

craigslist

OpenTable®

Angie's list®

ZocDoc

skejuo

redbeacon

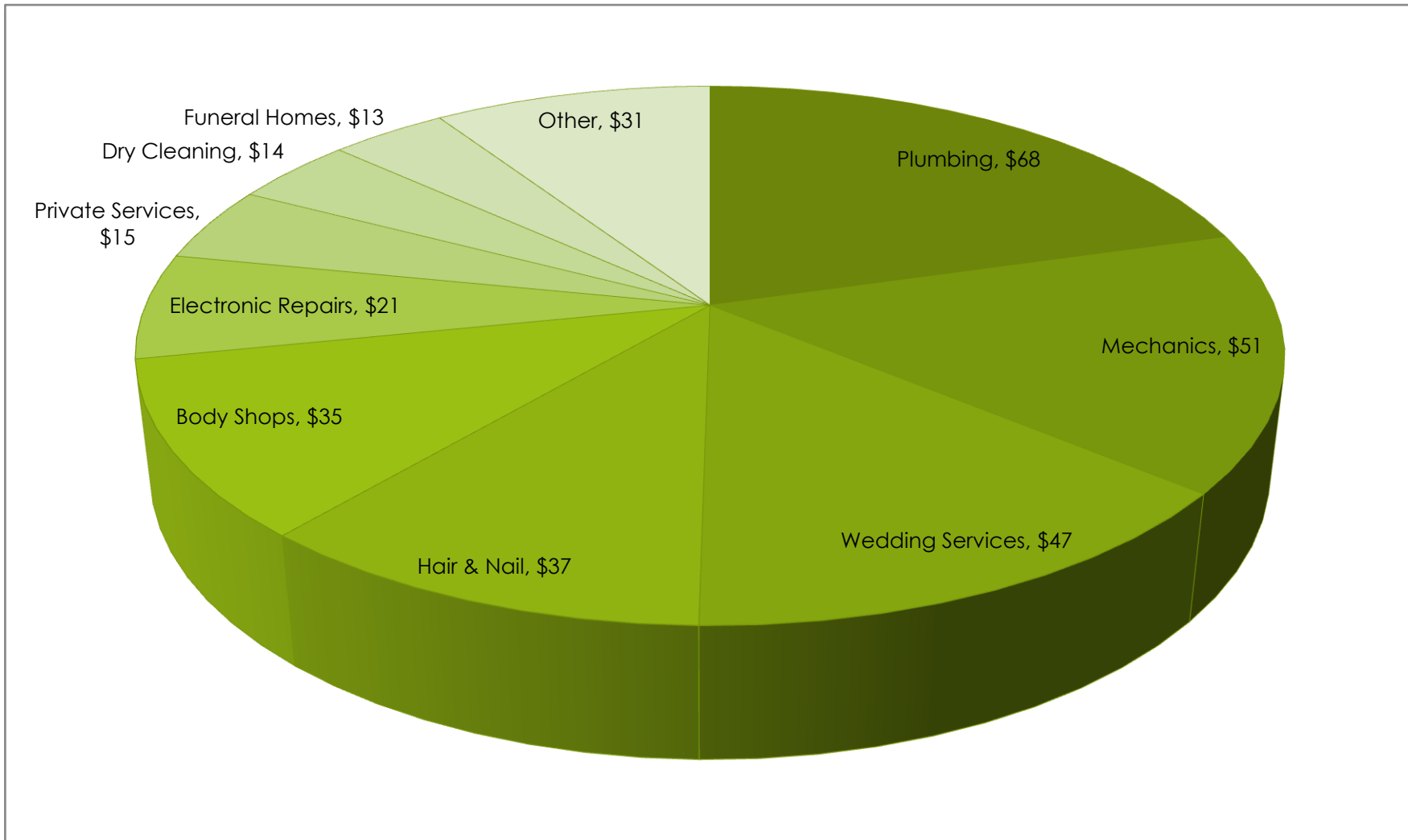timebridge

Doodle®

ScheduleOnce

Pencil'em

skedge.me

Future Direction

- Online service designed to connect local service providers with consumers

- Offers "apples-to-apples" comparison of local services for consumers by focusing on commoditized services market

- Needs critical mass of service providers to support a marketplace-like environment

Current "What's So" in Market

- ◻ Over $330B spent annually on locally-based, commoditized services in the US

- ◻ Highly fragmented market with millions of providers

- ◻ No ubiquitously used online tool to connect services supply & demand – Despite the entrance of several competitors over the last three years

- ◻ Vast majority of the locally-based services providers do not have an organized online strategy or presence

- ◻ Overall services industry is relative stable
  - ◻ Year-over-year spending is flat (down .4% from 2010)

Current Market Size – $332B (IBIS World 2011)

Pie chart showing market size by category: Plumbing, $68; Mechanics, $51; Wedding Services, $47; Hair & Nail, $37; Body Shops, $35; Electronic Repairs, $21; Private Services, $15; Dry Cleaning, $14; Funeral Homes, $13; Other, $31
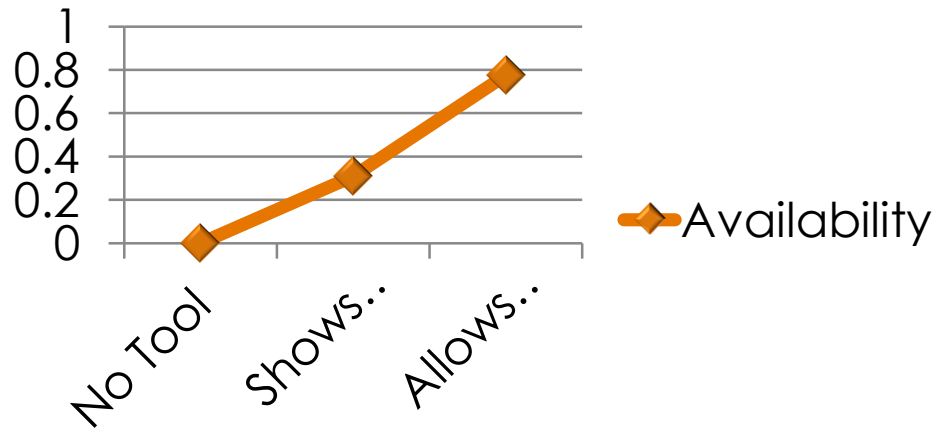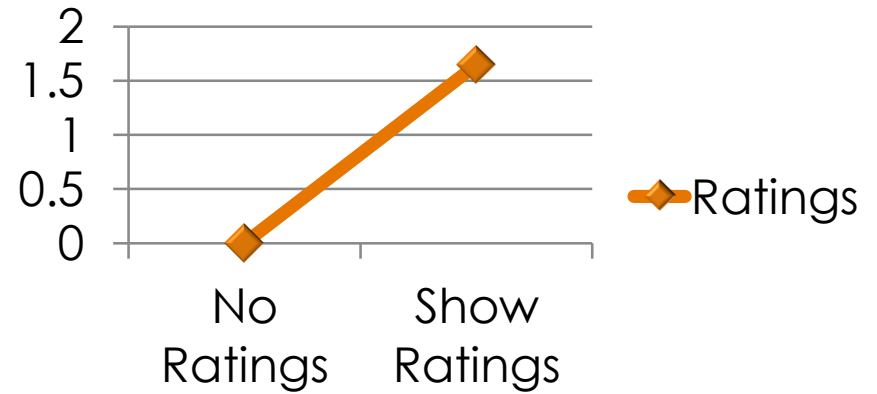
The Opportunity

- Create a better marketplace for analyzing and purchasing services for consumers

- Become the de facto standard for searching for services

- Capture a fraction of the services business total revenue through pre-paid service options

- Assist service providers with expanding web presence
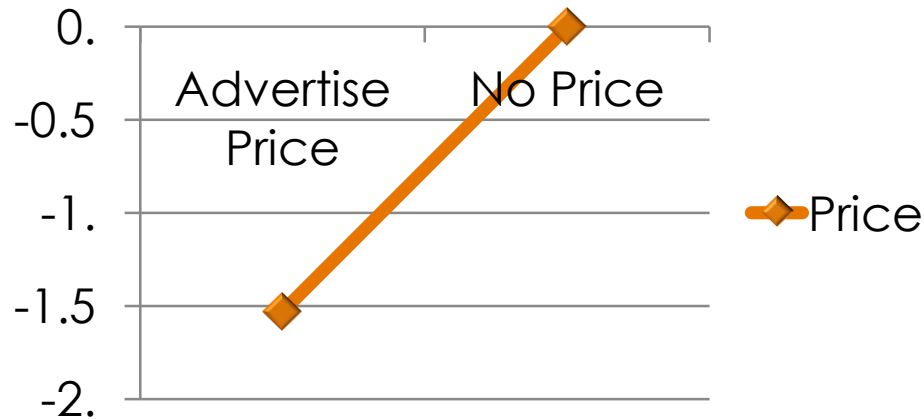
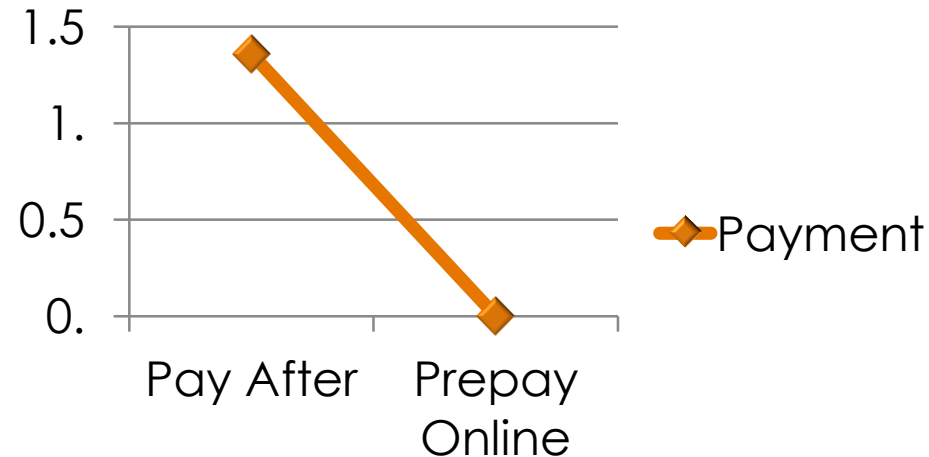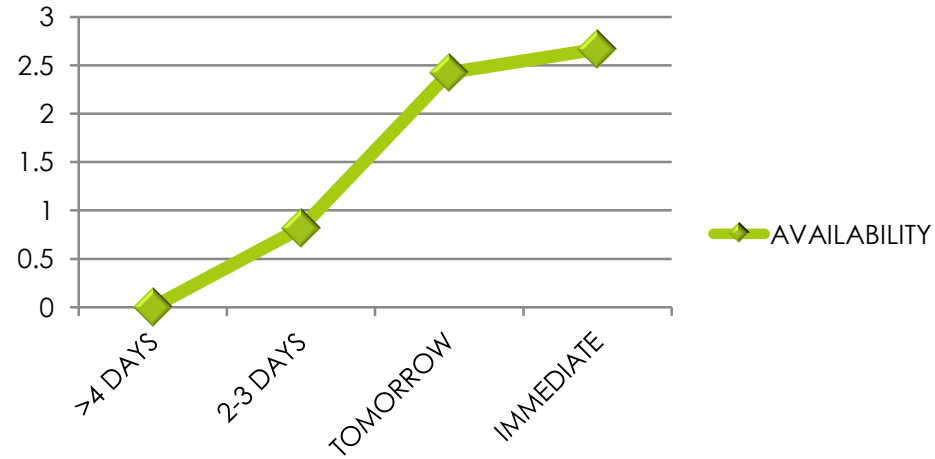# Voice of the Service Providers

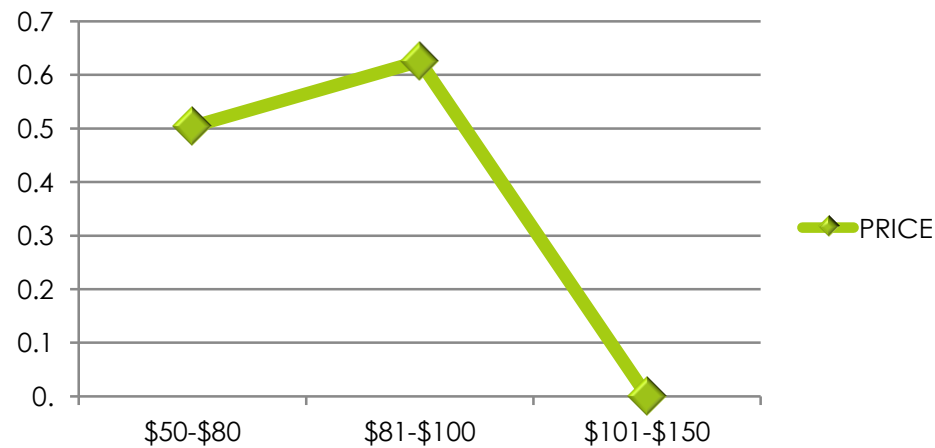## Availability

Ratings

Price

Payment

Voice of Service Consumers
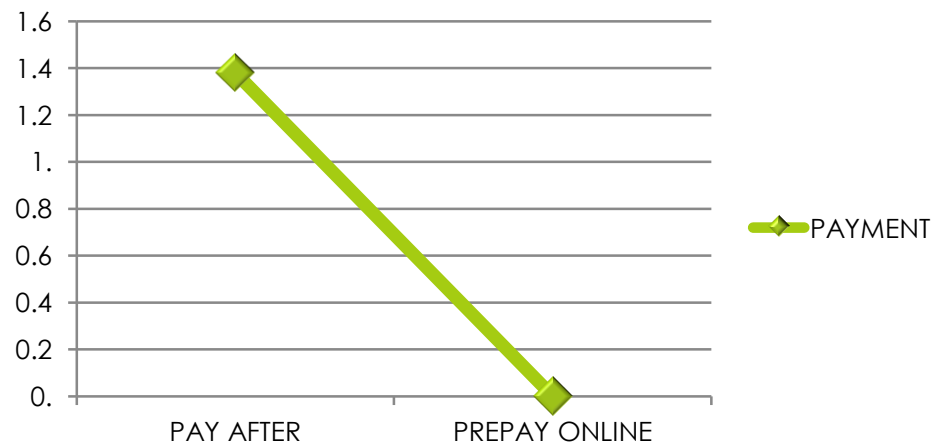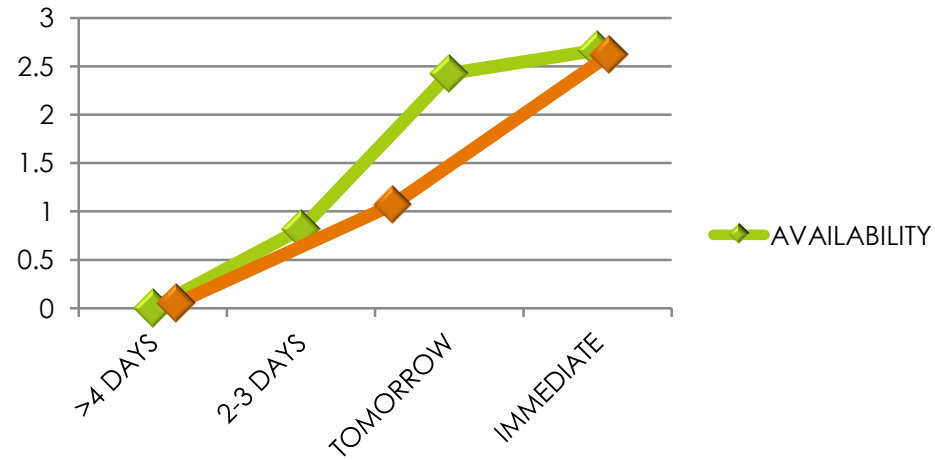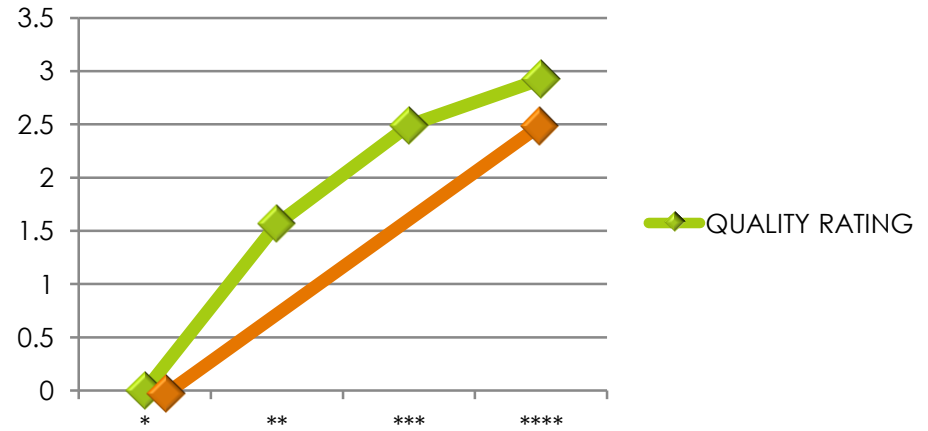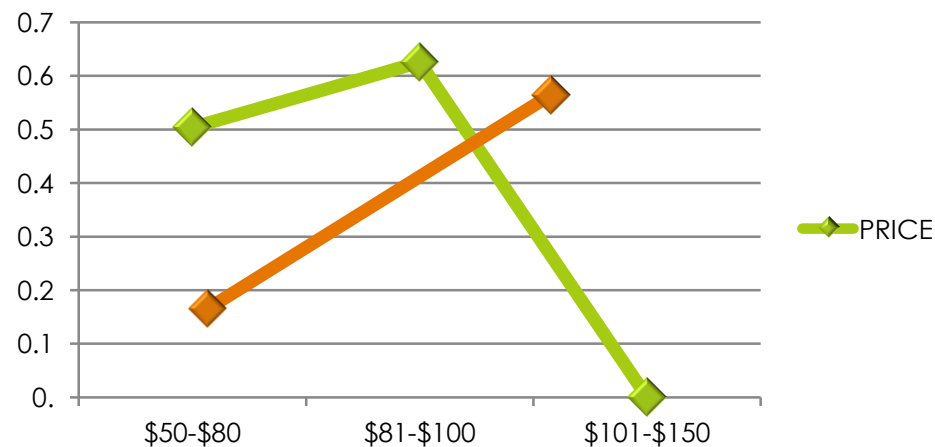
Voice of the Market
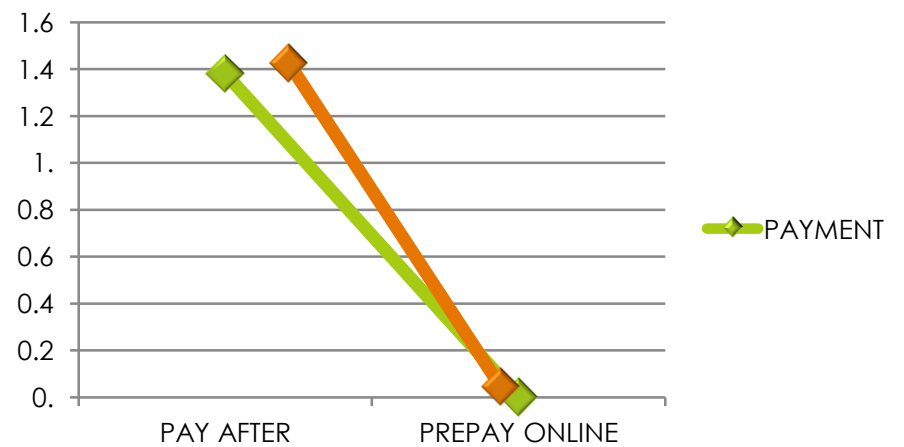
Most Important Factors for Providers
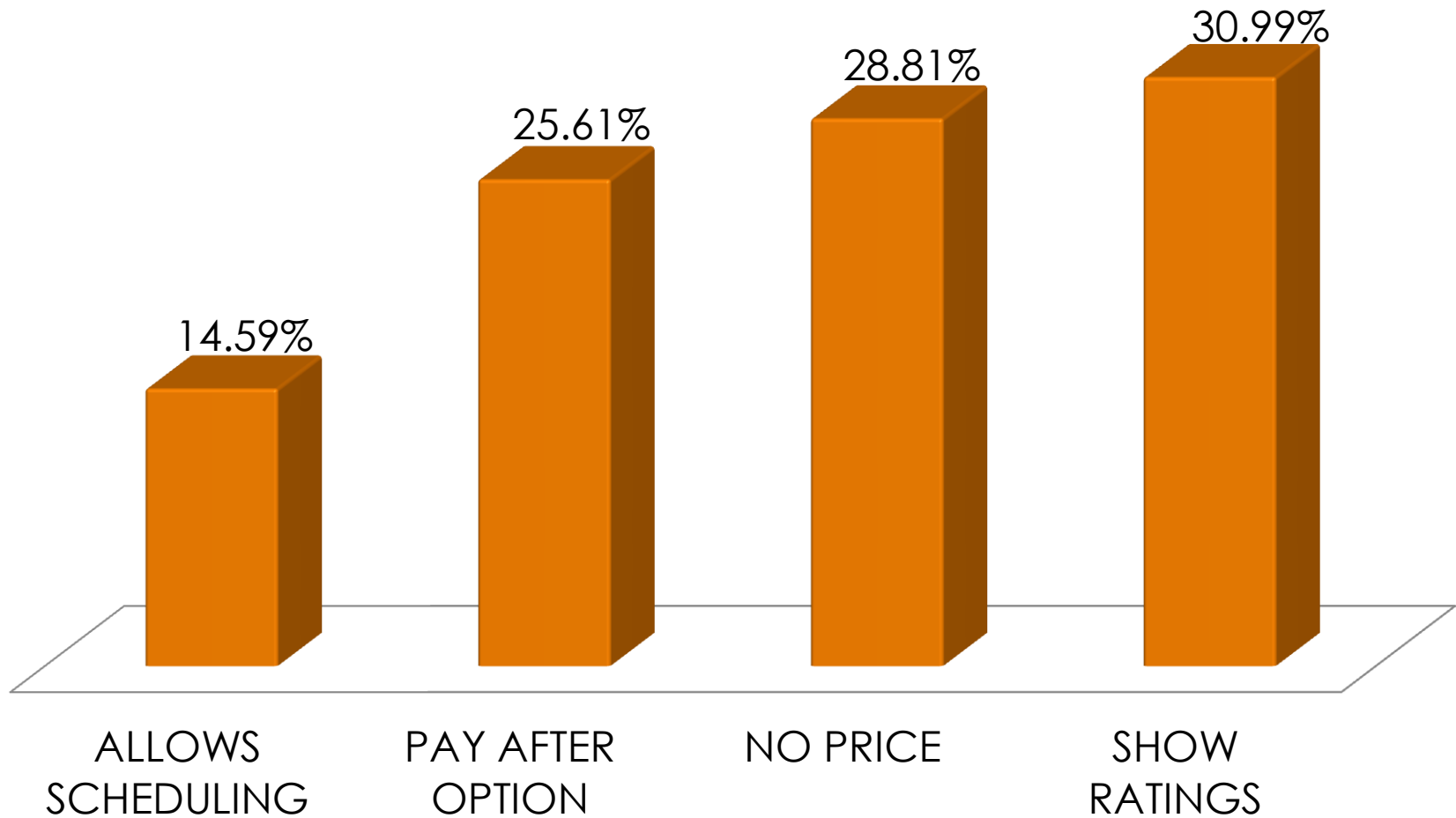
Most Important Factor for Customers
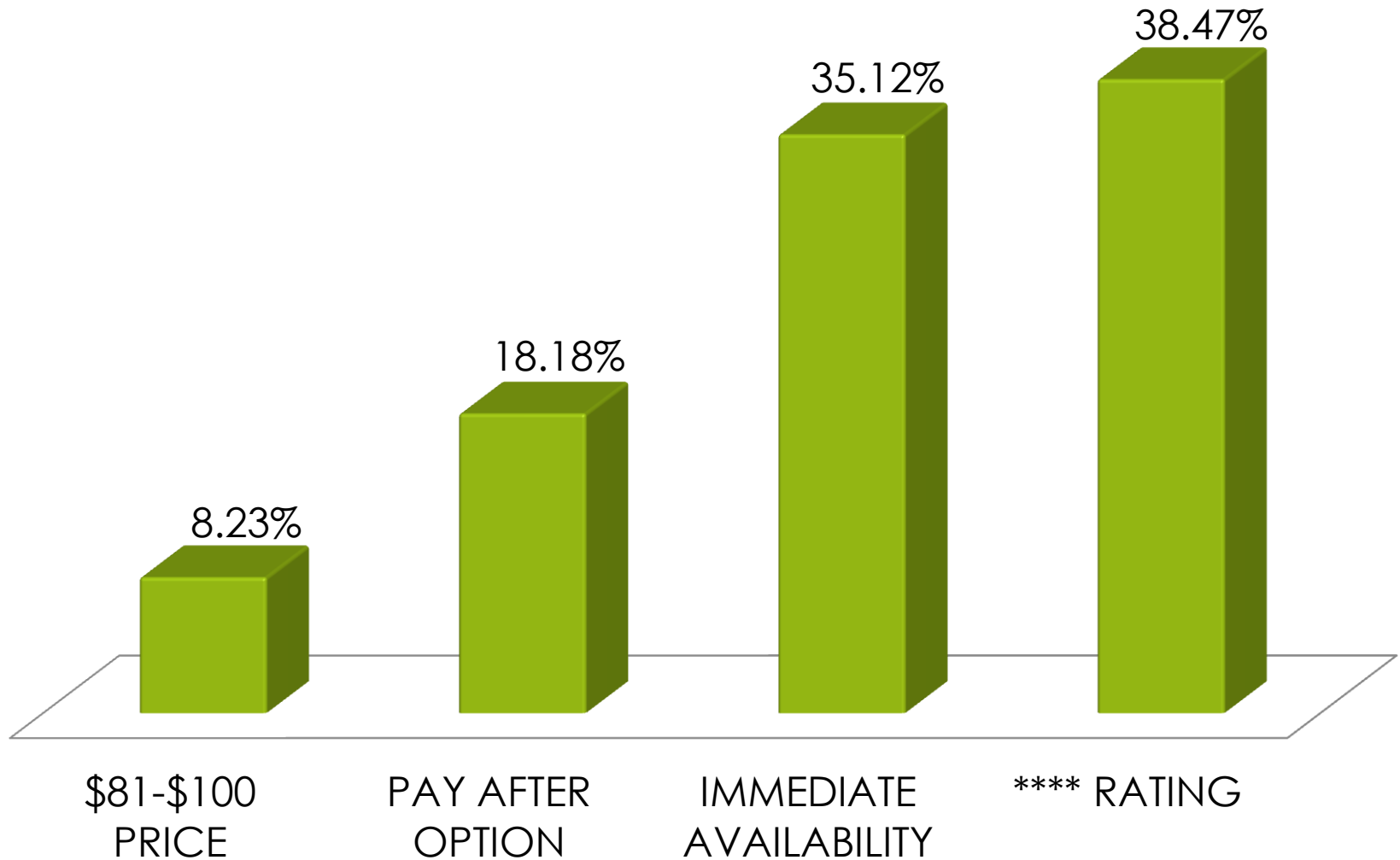
Product

- Provides pathway for consumers to find relevant providers

- Allows providers to receive useful business services

- Offers tutorial video for both consumers and providers on how to interact with the online tool

- Offers discounted prepay online option for monetization

- Content derived from agreements with service providers

Product: Wireframes

Step 1: Answer 4 Simple Questions

Step 2: Review Local Service Provider Options

Step 3: Get Cheaper, Faster Service

Need to find a service provider?
CLICK HERE

Service Providers
CLICK HERE

Product: Wireframes

Step 1: Answer 4 Simple Questions

→

Step 2: Review Local Service Provider Options

→

Step 3: Get Cheaper, Faster Service

Need to find a service provider?
CLICK HERE

1. Where do you need the service?

ENTER ZIP CODE:

Product: Wireframes

Step 1: Answer 4 Simple Questions

Step 2: Review Local Service Provider Options

Step 3: Get Cheaper, Faster Service

Need to find a service provider? CLICK HERE

2. What type of service do you need? (SELECT ONE)

ELECTRICIAN
PAINTER
PLUMBER

Product: Wireframes

Step 1: Answer 4 Simple Questions

Step 2: Review Local Service Provider Options

Step 3: Get Cheaper, Faster Service

Need to find a service provider?
CLICK HERE

3. What specific plumbing service do you need? (SELECT ONE)

UNCLOG DRAIN
FIX DISHWASHER PLUMBING
FIXTURE INSTALLATION/REPLACEMENT

Product: Wireframes

Step 1: Answer 4 Simple Questions

→ Step 2: Review Local Service Provider Options

→ Step 3: Get Cheaper, Faster Service

Need to find a service provider? CLICK HERE

4. What is your timeline? (SELECT ONE)

TODAY
TOMORROW
2-3 DAYS
OVER 4 DAYS

Product: Wireframes

Step 1: Answer 4 Simple Questions → Step 2: Review Local Service Provider Options → Step 3: Get Cheaper, Faster Service

PLUMBING SERVICE PROVIDERS: SANDY, UT / UNCLOG DRAIN / IMMEDIATE TIMELINE

SERVICE PROVIDER	NEXT AVAILABILITY	RATING	PRICE	SKEJUO PRICE	CONTACT INFO
AAA Plumbing	8/12: Morning	****	$140	$112	Bob Jones
Acme Plumbing	8/5: All Day	**	$120	$96	Peter Wilson
Alta Plumbers	8/4: TODAY	**	$100	$80	Beth Johnson
Crowne Plumbing	8/6: All Day	***	$100	$80	Terry Schmidt
United Plumbers	8/5: Afternoon	****	$150	$120	William Walker
Uintah Plumbing	8/4: TODAY	*	$80	$64	Paula Adams

Product: Wireframes

Step 1: Answer 4 Simple Questions	→	Step 2: Review Local Service Provider Options	→	Step 3: Get Cheaper, Faster Service

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Bob Jones
AAA Plumbing
801.555.5555
bjones@aaaplumbingslc.com
555 S. 200 W. Sandy, UT

Product: Wireframes

Step 1: Answer 4 Simple Questions → Step 2: Review Local Service Provider Options → Step 3: Get Cheaper, Faster Service

PLUMBING SERVICE PROVIDERS: SANDY, UT / UNCLOG DRAIN / IMMEDIATE TIMELINE

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Full Name: _____   Billing Address: _____

Credit Card #: _____   State: _____   Zip: _____

Security Code: _____   Service Location: _____

Expirations Date: _____ _____   State: _____   Zip: _____

Target Market

- Phase 1: Target local plumbing service providers in SLC

- Phase 2: Bring local consumers to Skejuo.com

- Phase 3: Expand to other local service providers in SLC

- Phase 4: Expand to other markets

- Target Profile of Service Providers
  - Small service providers (1-5 employees)
  - Little-to-no online presence

Target Market Value Proposition

- Service providers
  - Expand sales through more online visibility
  - Multiple means of demonstrating value to consumers
    - Availability
    - Rating
    - Price
    - Skejuo discounted price

- Consumers
  - Commoditized, "apples-to-apples" service market comparison
  - Should lower market price for consumers

Value Proposition Challenges

- Price is important to consumers, but providers do not want to advertise price

- Neither consumers nor service providers want to prepay online

- Difficulty reaching critical mass in local markets to make the service a useful one
  - How do you gain the trust of service providers?

Financials - What we Know

- Building the rest of the website will be expensive
  - Skejuo.com has the scheduling engine, but it does not yet have overall GUI completed with a services database & search capability
  - Anticipate 6 months of development work at a cost of approximately $150K

- Adding service providers to create market buzz & critical mass will require considerable manual sales effort
  - Anticipate 12 months of sales work at a cost of approximately $120K

- As website traffic increases, infrastructure costs will increase
  - Anticipate $10K of infrastructure costs for the first 12 months

Financials – What We Need

- $280K of Seed funding to complete development of the application & launch business
  - $150K Product Development Costs
  - $10K Infrastructure Costs
  - $120K Pre-Revenue Salary (Sales, Finance, Support in place)

Lessons Learned

- Time dimension grows complexity exponentially, simplify if at all possible
  - Time zone
  - Recurrence
  - Timeline management

- Immature technology ends up driving the design and possibly business requirements, it should be the other way around