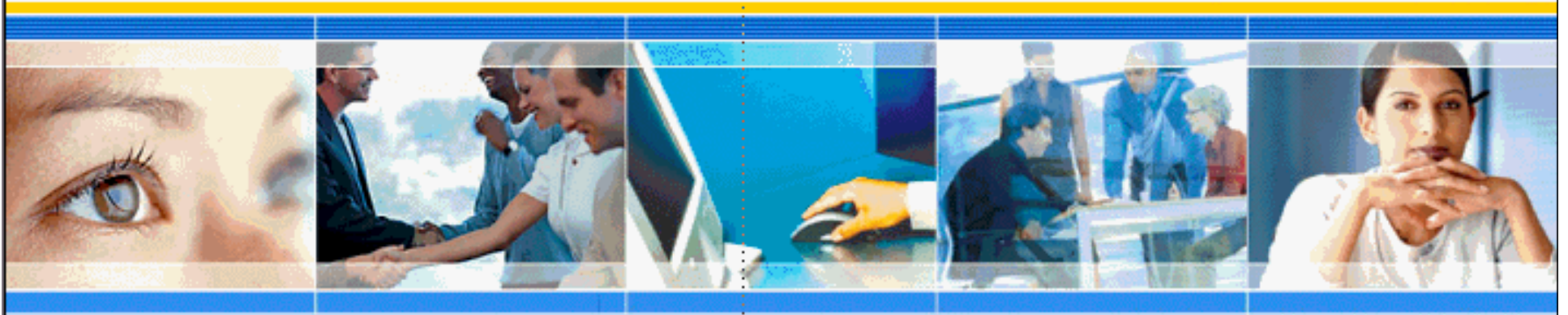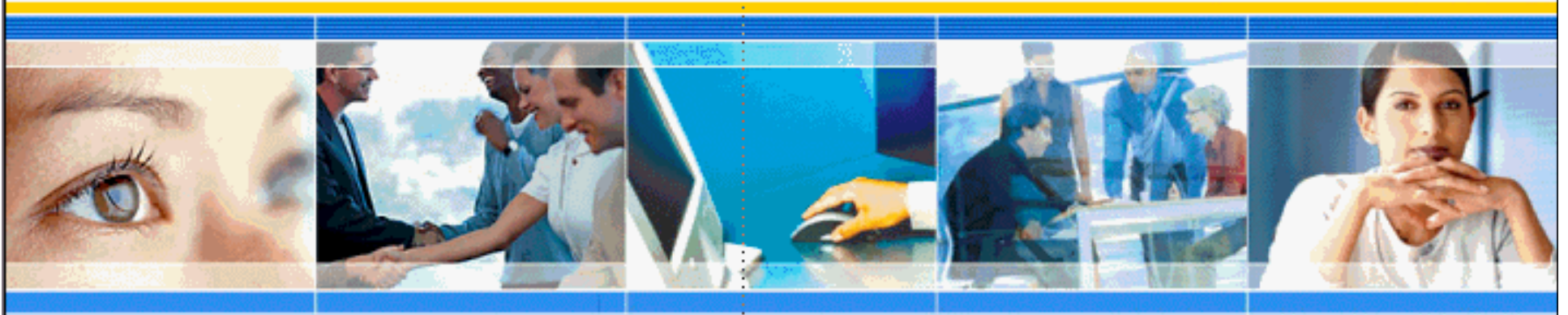# Feasibility Study

Horizonless Solutions

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Table of Contents

- **PART III:** VENTURE ANALYSIS

- **APPENDIX**
  - Part I INDUSTRY & MARKET ANALYSIS
  - Part II COMPETITIVE ANALYSIS
  - EXHIBITS

Venture Analysis

Horizonless Solutions

Table of Contents – Part III

- **VENTURE ANALYSIS**
  - **Opportunity**
  - **Product**
  - **Target Market**
  - **Unique Benefits**
  - **Competitive Advantage**
  - **Risks**
  - **Financials**
  - **Conclusions**

Opportunity

- **Problem**
  - **In person tours are**
    - Costly
    - Inconsistent
    - Inflexible
    - Standard
- **Compelling Need**
  - **A solution that offers**
    - flexible,
    - cost effective,
    - personalized, and
    - interactive
  - **touring service to increase**
    1. number of visits
    2. revenue per visitor

Product – Overview

- **An interactive touring solution delivered via an electronic handheld device with the following features:**
  - Multi-media content: text/pictures/audio/video
  - Location sensitive content prompting and delivery
  - Customized tours based on duration, interest, and audience
  - 24/7 availability
- **Horizonless Solutions will enable implementation through the following service offerings:**
  - Interactive content creation, translation, import and management
  - Device customization and deployment
  - Wireless Network configuration/integration
  - Application development and deployment
  - Training, service and business model development

Product - User Experience

Headphones for enriching audio experience

Current tour stop and recommended next stop

Photo viewing for site identification, various seasons, events, views, etc

Video selection of historic and relevant events and scenes or interest, etc

Background in text and audio narrative

Relevant Map and highlighted location

Product – Additional Features

- **From End-User Survey:**

Features the Interactive Tour Guide should have...
Calendar of events
clock and thermometer
Compatible with your rental car
directions
Email
Exchange rates
FAQ section about the area (2)
Frommers reports
Guides to restrooms
guides to snack bar
History
Info for kids
Input interests, and then the device would direct you to things
link to the internet (2)
Links to real time traffic and weather (2)
location of other guests in your party
Make the device very durable
maps
recommended restaurants (2)
Use the web
walkie talkie to others

Product – Offering Elements

Performance

Multimedia

Interactive

Engaging

Personalized

Availability/Reliability

24/7

95% System Uptime

99.9% Device Survival Rate

Implementation

Consultative approach

Fully supported

Turnkey effort

Cost

To implement: ~100-200K

To maintain: $2-3 per touring day

Service

9-5 M-F

1-800 support (Silver)

In person support (Gold)

24 hour resolution

Ease of Use

Easy to tour and navigate

Easy to manage and check-in/check-out

Easy to update content

Product - Business Models

- **Two partnership models are available to fund the implementation and maintenance of the service**
  - **Consumer Direct Model**
    - **Horizonless will pursue opportunities direct to consumer where touring value proposition is robust but the related business organization cannot manage it**
    - **National Parks, Towns and Cities**
  - **Business Buyer Model**
    - **Horizonless will let the business re-sell their service where touring proposition is less robust, but benefits to business are high**
   - **Attractions, Corporations, Universities, Hotels**

	Business Buyer Model	Consumer Direct Model
Who funds the service?	Business, with offsetting fees	Consumer
Who pays for implementation?	Business	Horizon less
Who manages the service?	Business	Horizon less
Who assumes Risk?	Business	Horizon less
Who manages billing?	Business	Horizon less
Who markets and promotes?	Business	Joint
Who gets most of the upside?	Business	Horizon less
Who gets a royalty?	Horizon less	Business

Product - System Overview

Content System
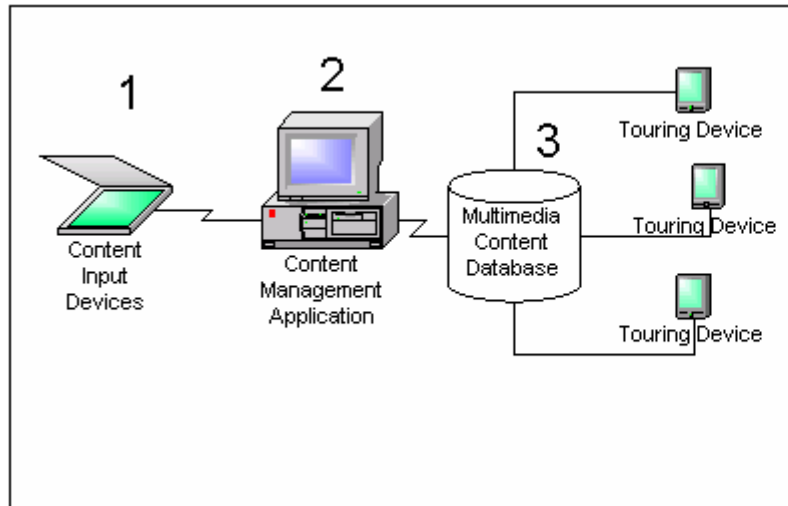
Touring System
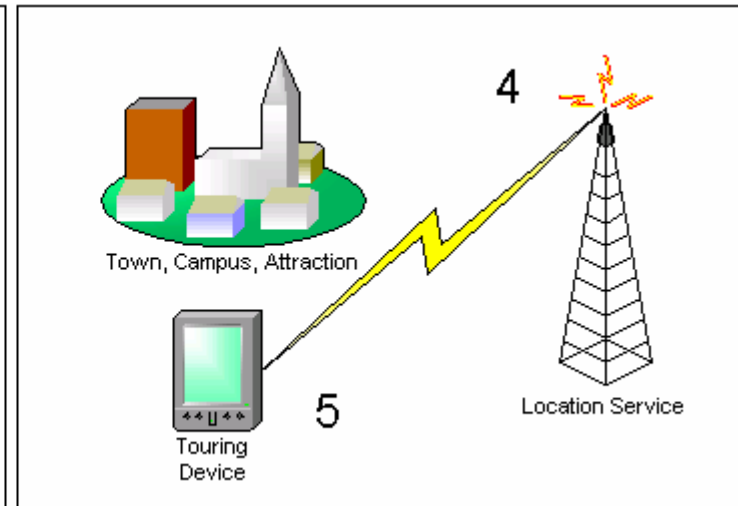
1. Existing and new audio and video content is uploaded into the tour using standard input devices

2. Horizonless' proprietary tour content management application translates all media into appropriate formats and integrates in into the tour

3. All application and content versions is stored in a database that is periodically syned with "docked touring devices"

4. The end user "checks out" the touring device which is location aware with the assistance of a wireless network

5. The touring device recognizes content applicable "hot spots" and prompts the user to view and listen to multimedia content

Product - Network Platform

Position Determination

	User Entered	GPS	RFID Tags	802.11 WAP	Cell Tower
Internal Storage	**Advantages:** Free network, cheap handheld, high positional accuracy, **Disadvantages:** poor customer experience, no real-time content	**Advantages:** free network. **Disadvantages:** outdoors only, low positional accuracy, no real time content	**Advantages:** cheap network **Disadvantages:** indoors only, very limited range		
802.11 WAPs				**Advantages:** high positional accuracy, indoors and outdoors, real-time content **Disadvantages**: short range, network maintenance costs.	
Cell Towers					**Advantages:** Many Users, real-time content **Disadvantages**: contracting barriers, high cost, low coverage in parks
Satellites		**Advantages:** nationwide coverage, real-time content **Disadvantages: :** Contracting barriers, high cost, large handheld, outside-only			

Content Source

Product - Range vs. Accuracy
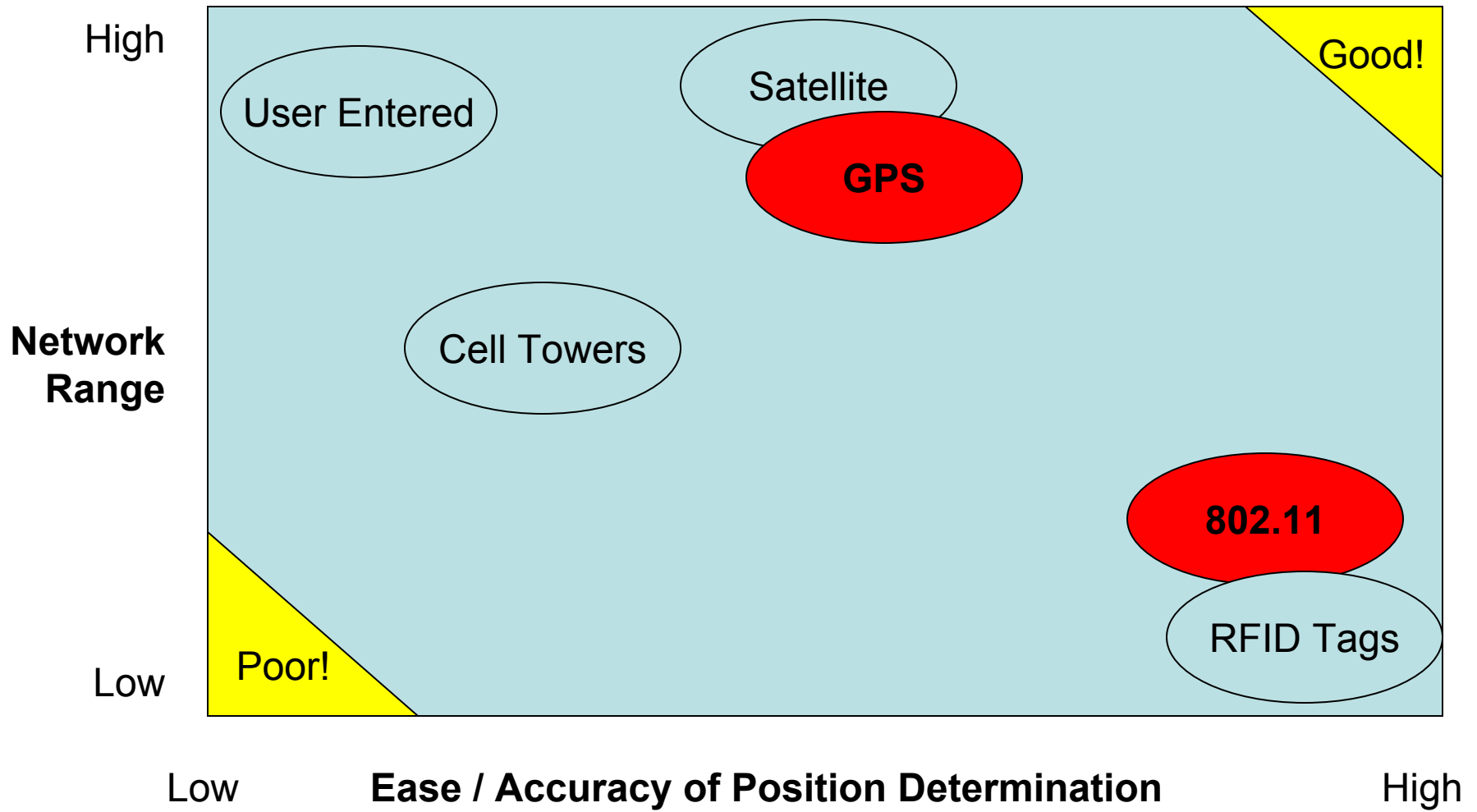
Product - Network Platform Conclusions

- **User determined position – internally stored content**
  - **Description:** User enters position by reading tag and manually typing a number into the mobile device. Manual device accesses content from internal memory.
  - **Rejected** Users do not want to enter the position manually.
- **RFID tag determined position – internally stored content**
  - **Description:** Mobile device determines position via proximity to RFID tags. Mobile device accesses content from internal memory.
  - **Narrowly Applicable** Not generally useable for wide range touring, but possibly useful in museums with specific points of interest.
- **GPS Position – internally stored content**
  - **Description:** Mobile device determines position via GPS. Device accesses content from internal memory.
  - **Promising** Although data cannot be updated in real-time, GPS will work throughout the world for free.
- **802.11 position / data**
  - **Description:** Mobile device determines position via 802.11 triangulation. Device accesses content from internal memory.
  - **Promising** Although network distances are short, 802.11 works well inside and offers real-time data or application changes.
- **Cell tower position / data**
  - **Description:** Mobile device receives position and content data from cell towers.
  - **Rejected** Using cell towers would require the difficult task of negotiating favorable deals with cell operators.
- **GPS position / satellite data**
  - **Description:** Mobile device receives position information from GPS satellites, and content information through special purpose satellites such as Onstar.
  - **Rejected** Not enough user-benefit to justify cost and complexity over GPS – internally stored data.

GPS Positioning with internally stored content represents the most promising long range / outdoors solution.

802.11 Positioning and Content distribution represents the most promising short range / indoors solution.

Product - Device

Desirable Features
Light
Small
Rugged
Inexpensive
Large color screen
Ergonomic interface
Powerful enough for application
802.11 and / or GPS enabled
External Memory Slot
10 hour rechargeable battery
Sound Capability
Camera
Standardized programming interface

Too Big

No GPS

A GPS-enabled / 802.11-enabled PDA represents the best compromise between price, usability, and versatility.
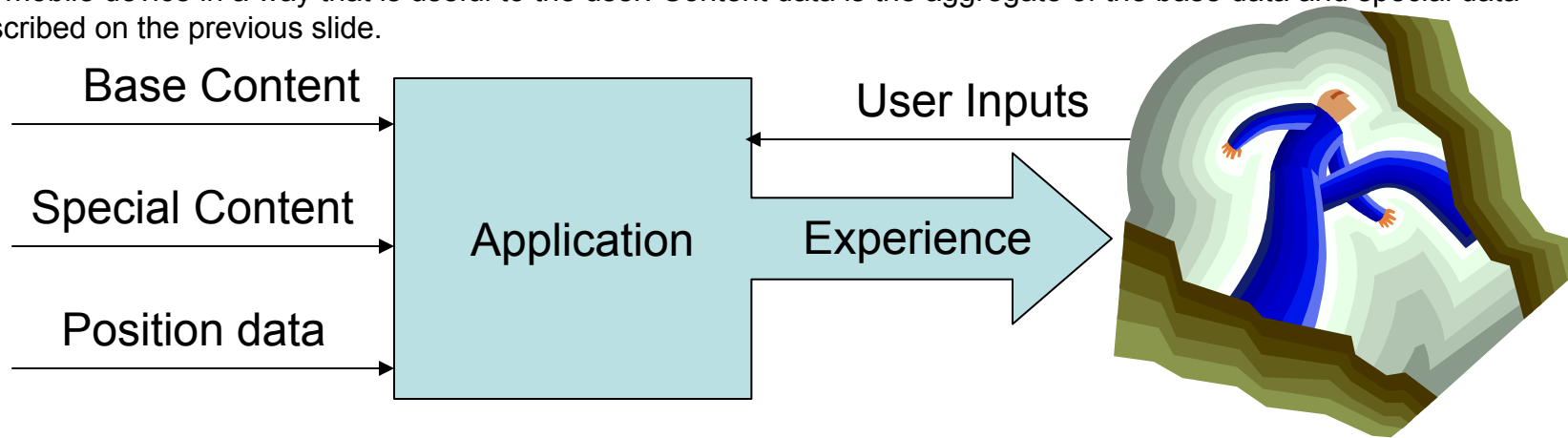
Proprietary Data Network

Product - Content

	Base Content	**Special Content**
Definition	Content which would be normally included in an ordinary mapping application.	Content unique to our touring application
Examples	streets, contour lines, mountain names, rivers, and lakes.	Movies, pictures, trail maps, sounds, etc.
Sources	 Navteq or GDT through license	We will have to develop this ourselves, or pay to have it developed.
Expected expense	Low up front costs with ongoing reasonable fees on a per mobile device basis.	Very high up-front development or purchase costs, but no licensing fees.

Product - Application

For purposes of this slide, application shall be defined as the software means by which the content data get displayed on the mobile device in a way that is useful to the user. Content data is the aggregate of the base data and special data described on the previous slide.

Base Content → Application

Special Content → Application

Position data → Application

Application → Experience →

User Inputs ←

Considerations

1. Portability to other network platforms.
2. Portability to other mobile device platforms.
3. Scalability of geographic breadth of application.
4. Expandability to new uses
5. Ease of Development
6. Cost of Development
7. Cost of use
8. Time to Market
9. Profitability

- **Two application development strategies**
  - **Develop our own**
    - **Difficult; probably at least 3 programmers by one year to develop a crude application.**
    - **Risky; could turn into a rat hole for very expensive startup capital**
  - **License**
    - **Easy; turnkey solutions are available from several vendors.**
    - **Could be expensive in the long run due to licensing fees.**

Despite the long-term potential financial impact of licensing fees, a turnkey solution should be strongly considered because of the low risk and upfront costs.

Target Markets: Colleges

- **Description**
  - Large public and private college/university campus >5000 students
  - University of Denver, University of Colorado, Naropa University
- **Organization**
  - Each college has an office of admissions, under which a campus touring functions operate with 2-3 FTE
  - Most touring functions have a lead coordinator, with 2-3 administrators and a large staff of student volunteers
- **Product Perception**
  - No early adopters, this market views the technology as very advanced, and is only now slowly adopting the internet for core processes
  - Buyers in this segment views technology as "impersonal" and hence inferior to in-person tours
- **Sales Process**
  - Buyer: Touring coordinator makes a recommendation to the director of admissions, who makes the purchase decision, even down to 5-10K
  - Budget: Office of admissions, which is constantly under pressure and being reduced
  - Sales Cycle: 1 year +, very slow bureaucratic decision making, further time for implementation
- **Decision Criteria**
  - The primary criteria is does this technology or service:
    - A) Increase the number of applicants or acceptances by prospective students
    - B) Increase in quality of applicants or acceptances of prospective students
- **Payment Policy**
  - Standard Net 30 days, no discount
- **Channel**
  - Direct selling
  - Some potential channel partners in admission software or video companies
- **Conclusions**
  - Must be private or well funded University – could be a direct to consumer play via a Kiosk, in-person student tours are a powerful competitor

Target Markets: Corporate

- **Description**
  - Fortune 500 companies with large campus/facilities and many employees on-boarding each month
  - Employee focused company, "Best Places to Work" = does not view HR as a cost center
  - Storage Tex Sun Microsystems, IBM, Qwest
- **Organization**
  - Headquarters will have a centralized Human Resource organization that is responsible for orienting/on-boarding new hires, they then distribute the process and responsibilities to in a distributed fashion, where managers and mentors take responsible for various sections of the orientation
- **Product Perception**
  - For companies that are looking to appear technologically advanced perceive the product as a positive employee relations move
  - For companies that also have lots of customers visiting and want to make a similar positive impression
- **Sales Process**
  - Buyer: VP of HR or Customer Service
  - Sales Cycle: 3-6 months for sell-in approval, further time for implementation
  - Sales Hit Rate: Low percentage of buyers compared to prospects
- **Decision Criteria**
  - The primary criteria is does this technology or service improve "employee morale" and/or "time to productivity"
- **Payment Policy**
  - Standard Net 30 days, no discount
- **Channel**
  - Direct selling
- **Conclusion**
  - Not an attractive Market, value proposition just not compelling enough – too few companies view HR as strategic or have campuses large enough, no user-based pay/purchase business model available; pursue opportunistically

Target Markets: Attractions

- **Description**
  - Popular tourist attractions such as zoos, aquariums, stadiums, and museums that have a rich variety of available content, and a large geographic space
  - Invesco Field, Denver Zoo, Denver Aquarium
- **Organization**
  - The Executive Director normally has a head of customer service that manages the visitor experience.
- **Product Perception**
  - Very receptive, have other similar products in use.
- **Sales Process**
  - Buyer: A purchase this large will most likely need to be approved by the Executive Director or CEO of the relevant attraction
- **Decision Criteria**
  - The primary criteria is does this technology or service:
    - A) increase ticket sales due to direct marketing examples
    - B) Provide additional desperately needed revenue
    - C) Improve visitor experience and resulting word of mouth
- **Payment Policy**
  - Standard Net 30 days, no discount
- **Channel**
  - Direct selling

Target Markets: Parks

- **Description**
  - In the order of priority, National, State, and local parks with rich content, history and large visit numbers/budget 1,000,000 annual visits plus+
  - Rocky Mountain National Park (3M), Yellowstone National Park (30M)
- **Organization**
  - Each park is run by a superintendent and assistance superintendent that holds control over their local park budget
  - Each park reports back to the national organization, which hold significant sway over practices and technologies
  - Each park has a "gateway city" where this service could be marketed and sold
- **Product Perception**
  - Parks prefer traditional methods to management and are general slow to adopt new technology
    - They would perhaps help us with promotion but not directly own or operate the technology
- **Sales Process**
  - Buyer: A purchase this radical will most likely need a park superintendent to advocate for the technology, and then the national park office to approve its use
  - Budget: Each park has a sizeable budget from 500,000 (Charles Pinckney) to 30,000,000 (Yellowstone)
  - Sales Cycle: Could be as long as 1-2 years for the slow moving, cash strapped organization
- **Decision Criteria**
  - The primary criteria is does this technology or service:
    - A) Improve visitor access and experience
    - B) Provide additional desperately needed revenue
- **Payment Policy**
  - Standard Net 30 days, no discount
- **Channel**
  - Direct selling
- **Conclusion**
  - Different Sales Approach: we may direct sale to the consumer in these cases, the Parks are not a feasible customer but have large visitor numbers and access to them

Target Markets: Hotels

- **Description**
  - Large middle/upper market hotels in urban areas
  - Boulderado, Adam's Mark Hotel, Hotel Teatro
- **Organization**
  - Assistant general managers typically work with vendors, review proposals, and submit recommendations to the hotel general manager. General manager/owners make final purchasing decisions.
- **Product Perception**
  - Hotels liked the ability to deliver guests an activity list based upon gender, age, and interests. Upper market hotels were concerned this service would conflict with their philosophy of personal service by cutting the concierge out of the loop. Hotels managers thought guests would prefer concierge recommendations because they are unbiased opinions. Many managers suggested integration with existing hotel software to enhance the service.
- **Sales Process**
  - Buyer: Owner or hotel manager
  - Budget: Budget range depends on hotel size ($100,000 - $2,000,000)
  - Sales Cycle: 3-6 months for hardware/software vendors.
  - Decision Criteria:
    - Clearly fulfills a need for a hotel guests
    - Provides a clear benefit to the hotel (online internet access with a cordless keyboard)
    - Length of installation process. Does it work with existing hotel software?
    - How obtrusive is the technology or device within the hotel room or hotel lobby?
  - The primary criteria is does this technology or service:
    - A) Improve visitor access and experience
    - B) Provide additional desperately needed revenue
- **Payment Policy**
  - 1% 10, Net 30
- **Channel**
  - Path of least resistance is to integrate with existing hotel software (Fidelio) or telco (Coax Media) provider
  - Direct selling

Target Markets: Municipalities

- **Description**
  - **Large to mid-sized cities that draw large crowds of tourists**
  - **Denver Bureau of Tourism, Metro Denver Convention and Visitors Bureau, Denver and Boulder Chamber of Commerce**
- **Organization**
  - **Bureau's are typically run by a director and assistant director.**
  - **Buying decisions are typically driven by local business needs**
- **Product Perception**
  - **Municipalities thought highly of the concept because they saw it as increasing the equity value of the municipalities brand. Generating awareness around the municipalities unique historical areas and driving more people to come downtown to spend money at local businesses was a plus. The Metro Denver Convention and Visitors Bureau as well as the Denver Bureau of Tourism represent the most likely potential customers.**
- **Sales Process**
  - **Buyer:**
    - **Written proposals are typically reviewed by the assistant director or director**
    - **Recommendations are passed along to a broader committee or board**
  - **Budget: Depends on city size ($5.4M for the Denver Bureau of Tourism)**
  - **Sales Cycle: 3-4 months.**
- **Decision Criteria**
  - **The primary criteria is does this technology or service:**
    - **Bring more people downtown to shop and gain exposure to the city?**
    - **For those already downtown, does it enhance their perception of the municipality?**
    - **Does it increase the sales for local businesses?**
- **Payment Policy**
  - **Standard Net 30 days, no discount.**
- **Channel**
  - **Direct selling, buzz/word-of-mouth through influential members of local business community.**

Target Market - End-User Feedback

1	City
2	College
3	Attraction
4	Town
5	Park
6	Stadium
7	Company
8	Hotel

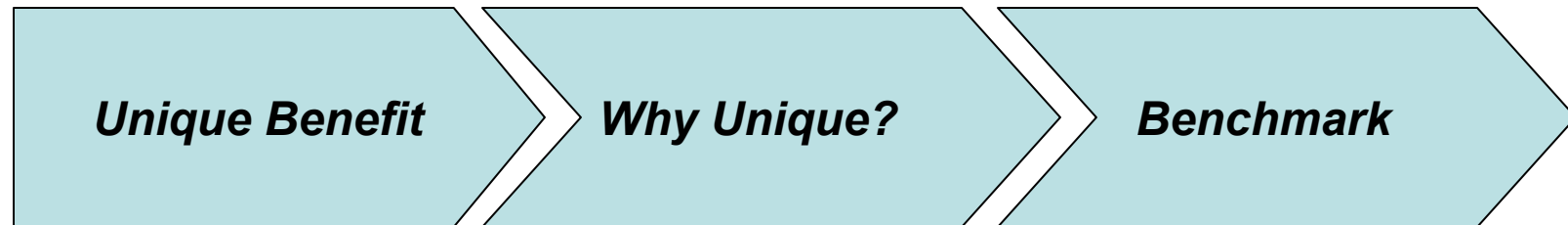Markets ranked from most likely to least likely to use the Virtual Tour Guide

- **Why use the Virtual Tour Guide?**

Why use the Interactive Tour Guide?
I always for get to bring guide materials when I am at a place, this would be there for me
Easier to find your way around
Easier to carry
Good to know the history (museums and historical site)
Would be compact, not make me look like a tourist (city)
Good for direction (City)
I t will help me locate certain areas I want to visit (College)
Info on a ton of interesting sites (City)
Fun entertainment before the game (stadium)
Great to locate sites to tour (city)

- **Why NOT?**

Why not use the Interactive Tour Guide?
Concierge is there already (Hotel)
I already know where I am going (Campus)
Information overload (Zoo)
I like being in nature by myself (Parks)
There is already a guided tour (Company)
who cares (stadium)
Can figure it out myself (town)
Rather have a human help with customer service (hotel)
Already have local friend probably (town)
Would rather be quiet in nature (parks)
Would prefer a human in a place like this (College)
Not spontaneous (town)
Kids are too distracting for this (aquarium)
I'd be exercising, not listening (park)
Overkill (hotel)
I can ask someone instead (hotel)
The company rep is probably guiding me (company)
Will interfere with the natural experience (Park)
Too much information (hotel)
I would rather enjoy the natural env. (Park)

Unique Benefits

Unique Benefit	Why Unique?	Benchmark
Most enriching, interactive and personalized, touring experience	Current offerings feature only text (pamphlets), voice (in-person), pictures (maps)	A personalized History or Discovery channel special on a place with integrated video, pictures, narrative, interviews, audio is the our target experience
Easiest solution to implement	Current landscape is filled with confusing technology jargon and companies	A turnkey content integration experience as delivered by Advertising agencies for web and print design – as consultative, and as turn-key

Competitive Advantage – Substitute Products

From the End user survey…The Virtual Tour Guide vs…

A MAP:

Pro
easier to use
one thing for everything
easier to carry around
don't have to deal with small hard to read print
Audio is better than a map to read
Con
I like to hold the information
Screen to small
I like finding things on my own

A BOOK:

Pro
Easier to Use
lighter/easier to carry
More interactive
don't have to find the right page
More un to date
Con
it might be hard to read from the screen
Guide books easier to search

A HUMAN:

Pro
Tour guides show too much or too little, this lets me pick and choose
I don't like group tours
Tour guides are annoying
Con
Person knows more
a person has personality
more entertaining than a screen
cant ask questions as easily
prefer people to computers
I like personal touch

Finance – Business Structure

Prototyping Function

    Responsible for developing initial prototype application.

Site Creation Function

    Responsible for integrating content into application for a new site.

    Responsible for hiring initial operating crew for a new site

    Responsible for marketing kickoff of a new site

                                                 Sunk Costs

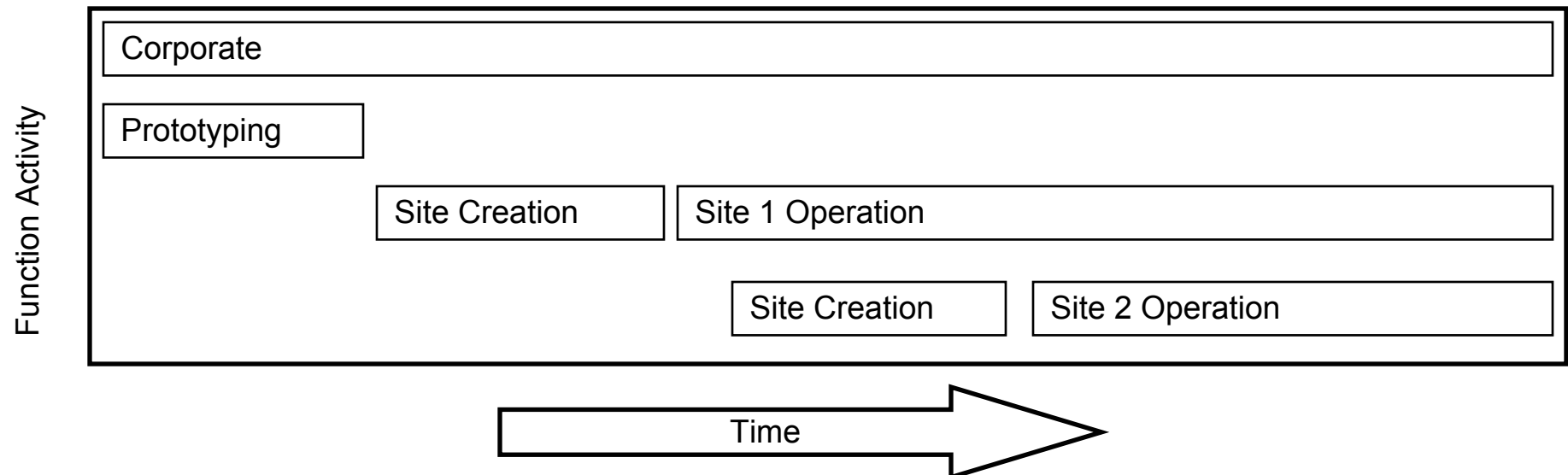**Corporate Function**

    Responsible for continuing strategic and tactical control of sites and strategic SCM.

Site Operating Function

    Responsible for ongoing operational activities such as PDA purchasing, PDA distribution, PDA preparation, PDA disposal, site management, etc.

                                               Fixed and Variable Costs

Finance – Corporate, Prototype, and Site Creation Functions

Corporate Function Costs	
Management Salary	$0
Misc GA	$20,000
Total Ongoing costs (per year, fixed)	**$20,000**

Ongoing costs for General and Administrative functions.

Prototyping Function Costs	
Programmer Salary, per year	$75,000
Programmers required	4
Years required	1
Application Development Software	$0
Total Programmer Salary	$300,000
Equipment and misc	$25,000
Total Prototype Development costs (one time)	**$325,000**

Costs for developing prototype application. All costs expected to be incurred in first year.

Site Creation Function Costs	
Content Acquisition	$10,000
Content Integration	$10,000
Hiring and Setup	$5,000
Total Site Creation Costs	**$25,000**

Costs incurred once with each new site installation.

Finance – Income Statement - Single Site

Year of operation:	Year 1	Year 2	Year 3	Year 4	Year 5	
Revenue	**$67,860**	**$193,140**	**$318,420**	**$375,840**	**$375,840**	Income
(COS - PDAs)	($19,800)	($28,000)	($36,200)	($26,400)	($26,400)	statement for
(COS - Wages)	($28,800)	($57,600)	($86,400)	($86,400)	($86,400)	**site**
Site Gross Profit (loss)	**$19,260**	**$107,540**	**$195,820**	**$263,040**	**$263,040**	**operation**
(Rent)	($12,000)	($12,000)	($12,000)	($12,000)	($12,000)	**only!**
(Marketing)	($12,000)	($12,000)	($12,000)	($12,000)	($12,000)	
(Management)	($24,000)	($24,000)	($24,000)	($24,000)	($24,000)	
Site Net Profit (loss)	**($28,740)**	**$59,540**	**$147,820**	**$215,040**	**$215,040**	
Site Gross Profit Margin	28%	56%	61%	70%	70%	
Site Net Profit Margin	-42%	31%	46%	57%	57%	

Operating Function Assumptions	
Price of PDA + Software	$200
Employees, per hour	$15
PDAs per employee per day	100
Employee duty cycle	5/7
PDAs required per customer	3
Average Rental Price per PDA	$15
Customer Pool (per year)	500,000
Market Saturation	5%
Time to Market Saturation, years	3
Destruction rate of PDAs, monthly	5.00%
Rent	$1,000
Marketing, per month	$1,000
Management, per month	$2,000
Hours per day	8

Each Site is expected to produce an eventual 70% + Net Profit and 57%+ gross profit, suggesting fundamental viability of business model.

Finance – Income Statement

The following combined income statement is for a one site operation strategy. It includes all expected costs, including prototyping, site creation, and corporate overhead.

	Year 1	Year 2	Year 3	Year 4	Year 5
Sites to open	0	1	0	1	1
Revenue	$0	$67,860	$193,140	$386,280	$636,840
(COS - PDAs)	$0	($19,800)	($28,000)	($56,000)	($74,200)
(COS - Wages)	$0	($28,800)	($57,600)	($115,200)	($172,800)
Site Gross Profit (loss)	$0	$19,260	$107,540	$215,080	$389,840
(Rent)	$0	($12,000)	($12,000)	($24,000)	($36,000)
(Marketing)	$0	($12,000)	($12,000)	($24,000)	($36,000)
(Management)	$0	($24,000)	($24,000)	($48,000)	($72,000)
Site Net Profit (loss)	$0	($28,740)	$59,540	$119,080	$245,840
(Prototyping costs)	($325,000)	$0	$0	$0	$0
(Site Creation costs)	$0	($25,000)	$0	($25,000)	($25,000)
(Corporate Costs)	$0	($20,000)	($20,000)	($20,000)	($20,000)
Total Net Profit (loss)	($325,000)	($73,740)	$39,540	$74,080	$200,840

Finance – Break Even Analysis and Funds Required

Break Even Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	$0	$18,270	$130,500	$255,780	$362,790
Fixed Costs	$20,000	$44,000	$68,000	$68,000	$68,000
Variable Costs	$0	$23,200	$67,200	$104,000	$118,800
Breakeven Revenues			**$140,190**	**$114,594**	**$101,110**
Site Gross Profit Margin			49%	59%	67%
Site Net Profit Margin			12%	41%	54%
Total Net Profit Margin			-4%	33%	49%

With a Total Net Profit margin of 49% in year 5, the business appears feasible.

Break even revenues for years 3 through 5.

Funds Required

	Year 1	Year 2	Year 3	Year 4	Year 5
Total Net Profit (loss)	($345,000)	($73,930)	($4,700)	$83,780	$175,990
Funds Required	$500,000				
Cash Available at year end	$155,000	$81,070	$76,370	$160,150	$336,140

Because we make little capitalized investment in our model, net income ~= cashflows. Therefore, under our assumptions,we need only an initial investment of $500,000.

Competitive Advantage – Venture Resources and Capabilities

Human	▪Horizonless' three founders possess a strong track record of success in the field of high technology, bringing a wealth of technology product development and marketing experience to the table. (see bios in appendix for additional detail)
Capabilities	▪Andrew Gano – business development, marketing, market research/analysis ▪Shane Nowell – finance, operations, technology management and implementation ▪Aaron Roth – management, product development, user experience
Organizational	▪Through the development of the feasibility plan, Horizonless Tours has developed a close network of industry contacts and advisors who are interested in supporting the development of this business
Financial	▪Primary source of capital: $50,000 cash (Founder's contribution) ▪Secondary sources would rely heavily upon angel investors
Intangible	▪None
Physical Assets	▪None

Competitive Advantage – Barriers to Entry

- **Current state of the market**
  - The wireless, interactive tours market has yet to be developed.
  - Major players do not currently exist.
  - Several start-ups pursuing similar objectives represent new, fast-moving, and innovative competitors.
  - An aggressive response from larger firms who play in related markets (network operators, handset manufacturers, as well as content and application developers) is not anticipated due to the fact that Horizonless is pursuing a niche strategy that will likely fall under their radar.

- **Potential barriers to entry**
  - <u>IP:</u> Horizonless tours plans to patent the interactive touring device and copyright the company name as means of creating barriers to entry.
  - <u>Exclusive agreements:</u> Horizonless Tours plans to pursue an exclusive agreement strategy with parks, municipalities, and local businesses where Horizonless would be the exclusive provider of interactive tours for that region.
  - <u>Customer loyalty:</u> Horizonless' tours marketing and branding efforts are expected to generate customer loyalty that would serve as a barrier of entry.
  - <u>Switching costs:</u> are perceived to be very low for consumers but much higher for businesses.
  - <u>Trade secrets:</u> Central to Horizonless' strategy is the development of a streamlined process by which content may be pulled from various resources and delivered as an interactive tour.

Risks

Risk Type	Level of Concern	Description
Strategic	HIGH	▪Horizonless Tours' adoption projections in financial models may be unrealistic. Further consumer research is necessary to mitigate this risk.
Operational	HIGH	▪Horizonless' business model is based upon the ability the license content from third parties at reasonable rates. If Horizonless cannot negotiate reasonable rates, this venture will not be profitable. ▪If Horizonless Tours has overestimated its ability to quickly and cheaply generate an engaging, interactive touring experience, excessive development costs will make this venture unprofitable.
Technological	HIGH	▪If Horizonless cannot use technology in a way that easily enables device use without previous training, consumers will not find the service appealing. ▪Horizonless may have underestimated the complexity of the technology necessary to develop a compelling offering.

Risks

Risk Type	Level of Concern	Description
Competitive	MEDIUM	▪Existing start-ups may be better positioned to take advantage of the interactive touring opportunity.
Marketing	LOW	▪Inability to effectively communicate the value proposition in clear, simple terms, will impede Horizonless' ability to acquire customers.
Social	LOW	▪Consumers may backlash against the use of high technology in natural areas.
Economic	LOW	▪Horizonless' touring application is seen as an elastic service highly subject to swings in the economy.
Financial	NONE	▪No significant risks identified in this area.
Governmental	NONE	▪No significant risks identified in this area.

Conclusions

- **Horizonless' virtual touring application represents a feasible business**

Compelling Need	▪Domestic tourism is on the rise ▪Tourists are seeking more flexible solutions that accommodate their busy schedules and offer a unique, enriching touring experience.
Target Market	▪End users have expressed their interest in using such a service, primarily in large cities ▪Municipalities have expressed their interest in purchasing the service.
Benefits	▪The service's ability to generate an interactive, personalized touring experience does not currently exist in the U.S.
Competitive Advantage	▪Dependent upon Horizonless' ability to develop an efficient process in the transforming current content (text, audio, video) to an enriched touring experience for each point of interest.
Risks	▪Content acquisition – more research may be performed to better understand the type of content needed and cost of this content. ▪Technology development - prototyping is a cost effective tactic in mitigating the risk of potential failure of the application to offer a compelling service that is easily understood by the end user.
Profit	▪Success is wholly dependent upon Horizonless' ability to scale this model ▪Horizonless believes this concept can generate profit margins of 50% over the long-term, with ~$200k net profit in year 5. ▪$500K is required to start this venture

Recommendations

- **In order to pursue this opportunity, Horizonless has identified the following next steps:**

  1. Research what types of content are available, potential content partners, and the associated content costs

  2. Conduct in-depth market research to determine the functional requirements for a service targeting tourists in municipalities

  3. Work with the University of Colorado's computer sciences division to develop a prototype of the service, as a student project, at minimal cost

  4. Write a business that presents a compelling go-to-market strategy

  5. Strategically build a board of advisors in order to gain market access and refine business strategy

  6. Acquire seed money to refine the prototype

APPENDIX
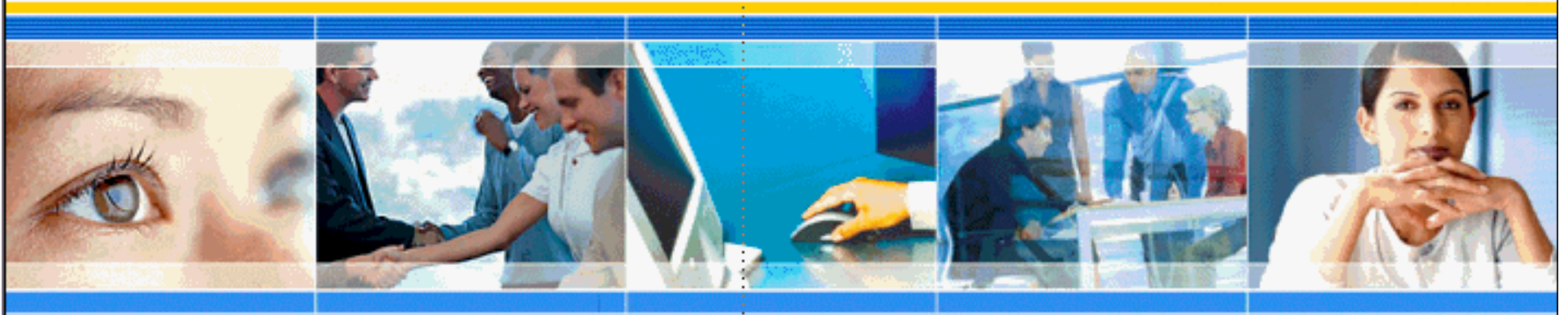
Horizonless Solutions

Table of Contents

- **APPENDIX**
  - Part I INDUSTRY & MARKET ANALYSIS
  - Part II COMPETITIVE ANALYSIS
  - EXHIBITS
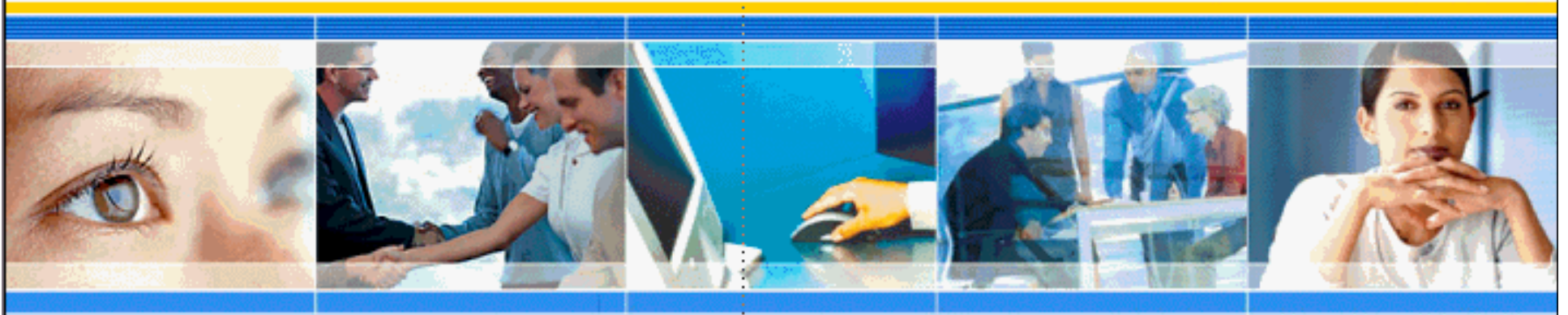
Table of Contents - Visual

| | Horizonless Solutions |

Industry

Location Based Services

Industry Segments

Handsets | Applications | **Solutions** | Content | Networks

Markets

Logistics | Real Estate | **Touring** | Agriculture | Insurance

Market Niches

Universities | Towns | Parks | Corporate | Attractions

Part 1: Industry Analysis

Part 2: Market and Competitive Analysis
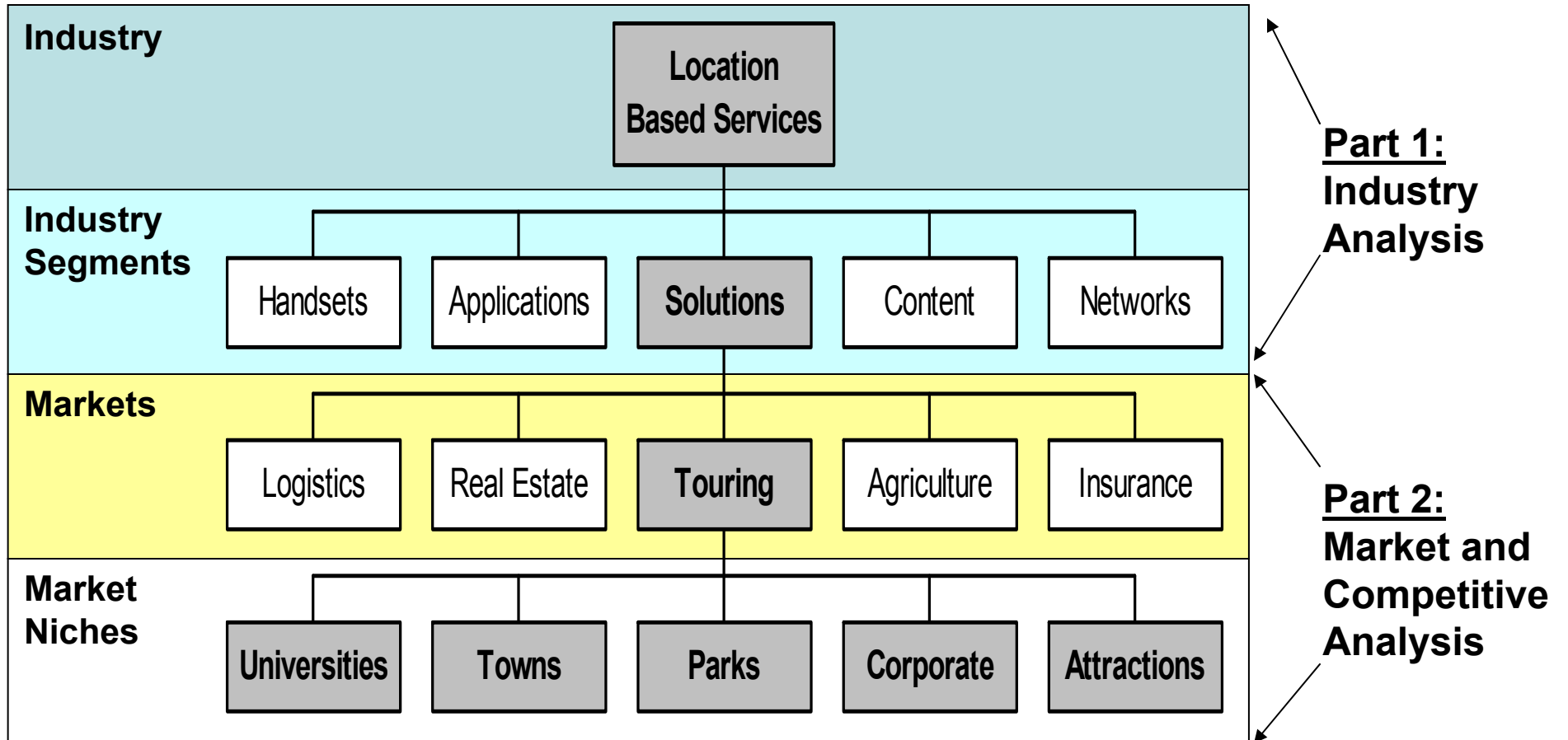
In this feasibility study, several levels of Horizonless' industry and market are analyzed, starting with the highest umbrella industry level and working to more detailed market niches.

Industry Analysis

Location Based Services (LBS)

Table of Contents - Part I

- **INDUSTRY ANALYSIS**
  - **Industry Overview**
    - **Description**
    - **Market Size / Growth**
    - **Trends**
    - **Technological Environment**
    - **Segmentation**
  - **Industry Segments**
    - **Role/Value Proposition**
    - **Customer/Supplier Relationships**
   - **Example Products/Companies**
    - **Relevant Trends**
    - **Structure**
    - **Threats**

Industry Description

- **Location Based Services**
  - **LBS can be described as "applications, which act according to a geographic trigger"**
  - **A Geographic Trigger might be the input of a town name, zip code or street into a web page, the position of a mobile [device] user or the position of your car as you are driving home from the office**
  - **Using the knowledge of where someone is or where they intend to go is the essence of LBS**

- **Technology Elements**
  - **Location-specific content**
  - **A wireless network**
  - **A mobile device**
  - **An interactive application**
  - **A mobile user**

Sources: 1- http://www.whereonearth.com/lbs/index.html

Market Size and Growth

Location Based Services
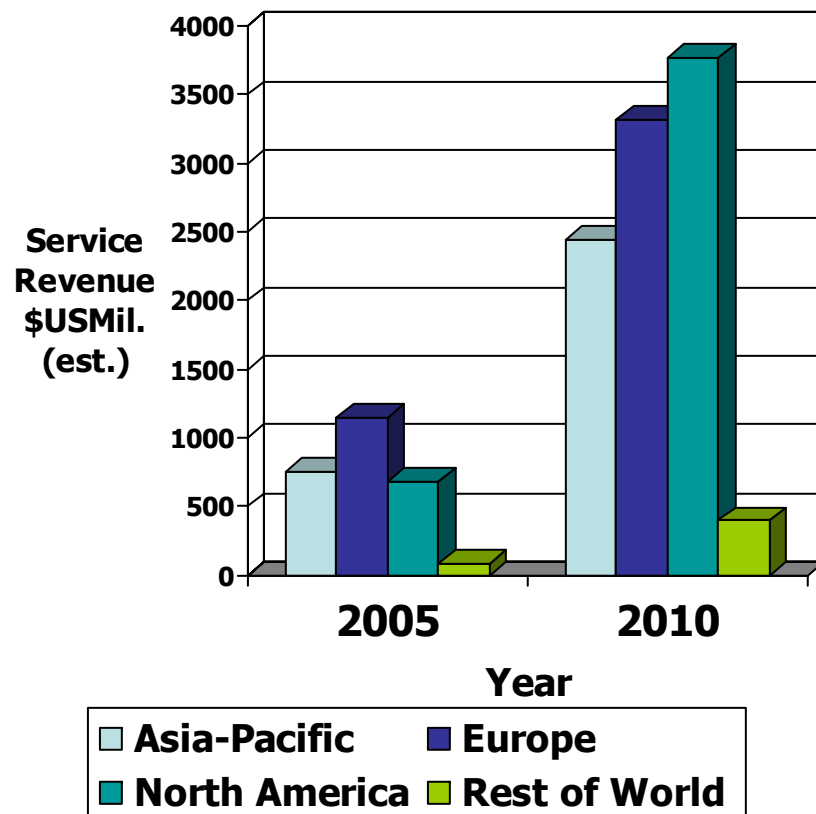
- **LBS will be a large, global market**
  - Worldwide service revenue will be over US$2 Billion by 2005 and near US$10 Billion by 2010
- **LBS is an emerging, high growth industry**
  - Over 30% CAGR for the next 7 years

Sources: UMTS Forum, Telecompetition

Industry Trends

- **Mobile devices improving**
  - **Personal Digital Assistants (PDA), Mobile Phones, and other GPS/Wireless devices are becoming more robust and easier to use**

- **Enabling technologies commercializing**
  - **Standard operating systems, protocols, and programming libraries available for devices, networks, and applications**
    - **.NET, Pocket PC, Palm, J2ME, WAP, etc**
  - **A hosts of start-up and established companies are commercializing technology tools such as development suites, GIS platforms**
    - **MapInfo, MapPoint, Microsoft Location Server**

- **Easier to acquire a precise real-time location for a device**
  - **Technology innovation in both GPS and Wireless spaces**
  - **All mobile handsets locatable by 2005**
  - **Telematics devices highly integrated in all autos by 2005**

  "The wireless ecosystem is about to be flooded with killer LBS applications"

Source: Steve Lombardi, Mar 27, 2003. "The Gears Have Been Greased. Mobile Location-Based Services are ready to roll!". Directions Magazine

Technological Environment

GPS A network of 24 radio transmitting satellites (NAVSTAR) developed by the US Department of Defense to provide accurate geographical position fixing.

Geographic Information Systems

A set of software, spatial databases, and protocols that allows queries based on geographical position, map coordinates to places, and assist in triangulation and location processing.

Supporting

Technologies

Wireless LAN 802.11x

a family of specifications for wireless local area networks (WLANs) developed by IEEE that enable packet-based data transfer.

Enhanced 911.

Federal regulations requiring cell phone operators to implement systems that allow 911 dispatchers to locate a cell phone to within 100 meters.

Personal Digital Assistants (PDAs)

A family of handheld devices that have standard operating systems and can deliver visual, audio, and wireless interactions to the user

Industry Segmentation

- **Primary markets segmentation is Business vs. Consumer**
- **Several industry segments make up the LBS delivery value chain**
- **A host of new opportunity in the technology and solution spaces**
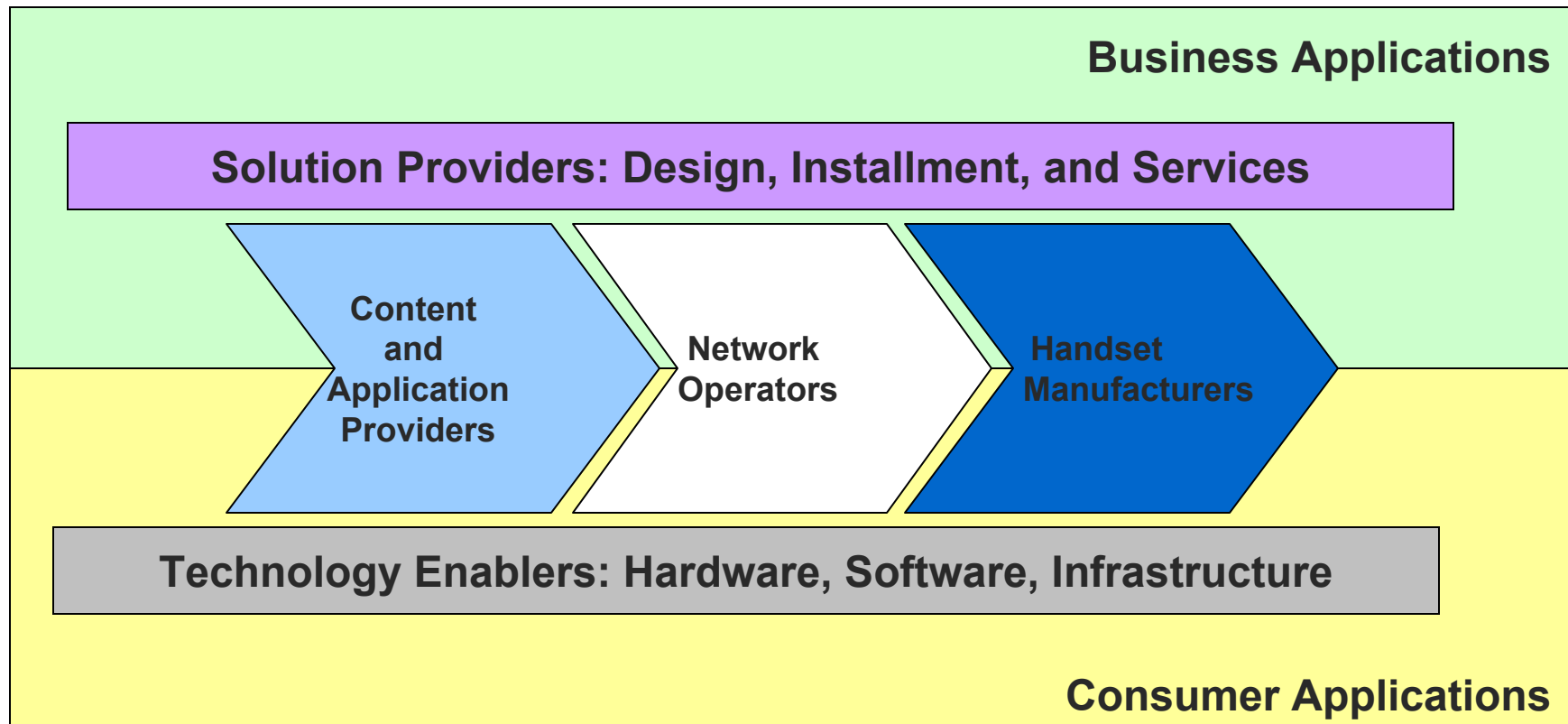
Segment Overview: Application Providers

Description	Application providers in the LBS space design front end user interfaces, integrate GIS content, and develop applications to use GIS data
Relationships	Customers: Network Operators, Handset Manufacturers, Automobile Manufacturers, Automobile Rental Firms, Government, Real Estate, Retail Suppliers: Software developers
Example Companies	MapInfo, Multimap, TelMap (UK), Autodesk Location Serivces, Navigation Technologies (digital maps for vehicle navigation), LandMat
Trends	▪Application providers have been experimenting with providing LBS to network operators. ▪Application providers have close relationships with large business customers.
Structure	No single provider offers 100% geographic coverage.

Segment Overview: Network Operators

Description	Network operators install and manage infrastructure that blankets geographic areas and transmit digital data. Operators purchase LBS from solution providers and resell them to the end customer.
Relationships	Customers: Individuals Suppliers: Application providers, handset manufacturers, telecommunications equipment manaufacturers
Example Companies	Verizon Wireless, AT&T Wireless, Cingular Wireless, Vodafone Live, Orange, mmO2 (British mobile operator), US Government
Trends	▪Network operators are building strong partnerships with LBS application developers. ▪Network operators are building proprietary multichannel and mobile portals ▪U.S. operators will own and control user location data, European operators own, but cannot disclose user location data
Structure	▪Mobile Voice and Cellular: Consolidated and national ▪Global Positioning Systems: Global and consolidated ▪Localized Data Networks: Fragmented

Segment Overview: Handset Manufacturers

Description	Manufacture hand-held units incorporating GPS, wireless, computing, and/or cell technology.
Relationships	Customers: Channel distributors Suppliers: Electrical and mechanical component suppliers
Example Companies	Garmin, Magellan, Nokia, Samsung, Motorola, Dell Products: GPS receivers, Cell Phones, PDAs, laptops
Trends	Technology and Price Driven
Structure	Mobile Voice and Cellular: Consolidated and National Global Positioning Systems: Global, and consolidated Localized Data Networks: highly fragmented

Segment Overview: Solution Providers

Description	Solution providers integrate wireless content, applications, and hardware to provide end-user with wireless, location-based solutions. Typical functions include application development, content management, integration, interface design, and billing management.
Relationships	Customers: Network operators Suppliers: Application providers
Example Companies	Webraska Mobile Technologies (Global), Navitime (Japan), Telcontar (UK)
Trends	▪Lack of standardized network technology is making it difficult to leverage scale economies and develop profitable LBS services. ▪Most LBS are offered through bundles with other services, instead of something consumers pay for separately.
Structure	Solution providers include a couple large, multinational corporations and several dozen small, niche businesses.

Industry Developments

Opportunities	Threats
▪The broad array of LBS applications provide ample opportunity for niche development. ▪Network operators and application developers are always looking new revenue streams; LBS niches fall under the radar of major players. ▪Self-guided touring as a low cost vacation alternative is increasing; Horizonless' solution can offer an enriched experience at a reasonable price. ▪Most direct competition focuses on the integration of geo-location and GIS data; Horizonless can enhance its offering by integrating additional context using historical and factual content as well as multimedia.	▪LBS solution providers (Webraska) could acquire a direct competitor and develop a touring package solution. ▪A direct competitor could form an exclusive arrangement with one of the GIS data providers, limiting Horizonless' ability to develop the product. ▪Privacy issues may inhibit the growth and possible extensions of LBS applications. ▪The quickly changing environment of development platforms could impede Horizonless' ability to grow if the wrong platform is selected.

- **Horizonless Solutions operates in the <u>Business Solutions</u> segment of Location Based Services**
  - ✓ A growing, high margin segment
  - ✓ Relatively low barriers to entry
  - ✓ A fragmented industry with relatively little competition
  - ✓ Relatively low power of customers and suppliers
  - ✓ A skill set match with the founding entrepreneurial team

Potential Markets in Business Solutions

- **Logistics**
  - Fleet managers, such as Con-Way NOW, are currently using GPS to track, in real-time, field worker activities that include hours worked, locations visited, vehicle speed, job progress, and vehicle paths.
  - Route guide applications provide turn-by-turn directions and route maps.
  - Using GPS to monitor and control vehicle speed generates better fuel efficiency and reduced maintenance costs.
  - Traffic and weather event information is delivered to vehicles to anticipate and mitigate slowed travel conditions.
- **Agriculture**
  - GPS is used to customize fertilizer and insecticide distribution based upon the varying needs of different areas of farm land.
- **Market Research**
  - Applications within themed environments (parks, zoos, aquariums, sports arenas, ski resorts) will allow business owners to know the location of their guests. Guest location information may then be used to improve product/service offering and foot-traffic flow efficiency.

- **Insurance**
  - Insurance companies are considering more accurate policy pricing based upon how drivers actually use their cars by analyzing speed, total driving time, and driving location.
  - Progressive insurance is currently beta-testing a program such as this in Texas.
- **Real Estate**
  - Potential services include delivering real estate agents instant access to location-based unit availability and pricing information while in the field.
- **Homeland Security**
 - GPS is currently used to track and monitor criminals.
- **Guided Touring**
  - Art museums are using wireless devices to enrich the museum experience by delivering historical content about art pieces to museum guests as they tour the museum.
  - National parks have considered using wireless devices and GPS to deliver educational information about historic parks sites.
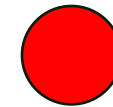
Markets Evaluation
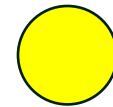
Legend: 🟢 Go 🟡 Caution 🔴 No-Go

Market Segment	Market Size	Compelling Needs	Competition	Barriers to Entry	Team Expertise
Logistics	🟢	🟢	🔴	🔴	🔴
Homeland Security	🟢	🟡	🟡	🔴	🔴
Market Research	🟡	🟡	🟡	🟡	🟢
Insurance	🟢	🟡	🟡	🟡	🟡
Real Estate	🔴	🟡	🔴	🟡	🟡
Touring	🟢	🟡	🟢	🟡	🟢

Based on a cursory evaluation of the potential markets, Horizonless Solutions will focus on the <u>Touring Market</u>, as it is currently underserved, has little competition, and is a match to team expertise.

Market and Competitive Analysis

Guided Touring

Table Of Contents – Part II

- **MARKET AND COMPETITIVE ANALYSIS**
  - **Market Overview**
    - **Description**
    - **Potential Niches**
    - **Needs and Offerings**
  - **Competitive Overview**
    - **Competitive Matrix**
    - **Basis for competition**
    - **Competitor Perception**
    - **Barriers to Entry**
    - **Degree of Rivalry**
    - **Sources of Competition**
    - **Control Over Prices, Costs, and Channels**
    - **Market Domination**

Market Description

- ## Definition
  - **<u>Guided Touring</u> is any service that delivers relevant directions, content, knowledge, understanding and entertainment to the consumer at the relevant time and place.**

- ## Potential Niches
  - **There are many potential customer niches for a guided touring service and Horizonless Solutions focuses on the following:**
    - **Parks**
    - **Museums & Attractions**
    - **Universities & Colleges**
    - **Cities & Towns**
    - **Hotels**
    - **Large Corporate Campuses**

Market Needs and Potential Offerings

- **Parks**
  - **Customer**: An outdoor state, national, or local park that has landmarks, trails, and sites for touring.
  - **Need**: Visitors seek to understand more about the variety of flora, fauna, and nature around them, park rangers and staff do not have the time or ability to meet this need.
  - **Offering**: A location-sensitive interactive tour that guides visitors through trails and points out unique park features

- **Attractions**
  - **Customer**: Museums, zoos, aquariums, theme parks, sports arenas and other visitor-rich destinations
  - **Need**: Attractions seek to drive additional publicity and revenue through guided touring
  - **Offering**: An interactive tour that provides a low-cost revenue stream

- **Colleges**
  - **Customer**: Admissions offices catering to prospective students
  - **Need**: Admissions seeks to make the university appear technically advanced and promote the campus to prospective students and visitors wish to get a feel for the history and main sites on campus before attending
  - **Offering**: A location-sensitive walking tour that describes the primary buildings and quads of the campus

- **Towns**
  - **Customer**: Cities and municipalities with a historic or landmark rich downtown area
  - **Need**: Municipalities seek to increase tourism and related revenue
  - **Offering**: A location-sensitive interactive walking or driving tour that features everything from landmarks to restaurants

- **Hotels**
  - **Customer**: National and local four and five star hotels and resorts
  - **Need**: To make the guest experience memorable, enjoyable, and easy
  - **Offering**: A "smart" concierge service that guides the patron through the hotel and surrounding amenities

- **Corporate**
  - **Customer**: Corporations with large multi-building campuses
  - **Need**: To orient their employees when they begin work
  - **Offering**: A "orientation buddy" interactive guide that provides directions and information for the new employee

Sources of Competition

- ## In-Direct
  - A set of <u>substitute services</u> that exist in the marketplace today and mostly consist of human-led group tours or self-guided tours aided with maps/and or placards/signs

- ## Direct
  - Direct competitors offering similar location based services in the touring segments

	In-Direct	Direct
Parks	Ranger led tours; hired naturalist guides; activity touring companies; maps; placards	
Attractions	Group tours, maps of the attraction	34 North, 118 West; "Pal Mickey" from Disney; Kosmo Studios; PanGo
Universities	Student-led group tours; self-guided maps; online web-based tours	PanGo; The Active Campus Project
Towns	Local maps; marked walking or driving tours; placards	Talking Streets; Annotatespace.com
Hotels	Concierge service; brochure; visitor binder	Traveler on the Move; Newbury Networks
Corporate	HR representative; mentor; intranets	

Basis of Competition

- **Performance**
  - **The ability to deliver a content rich, entertaining, and relevant tour**

- **Consistency**
  - **The ability to deliver a consistent end user experience**

- **Cost**
  - **The cost per delivered tour**

- **Flexibility**
  - **The ability to deliver a tour of any size at any time in any order**

- **Implementation Ease**
  - **The time and effort required to set-up and administer the touring program**

Competitive Matrix

	Indirect Competition	Direct Competition	Horizonless Solutions
Performance	**High/Medium** ▪Brochures and large tour groups offer fixed content. ▪Content restricted to static photographs and verbal communication.	**Medium** ▪Geographically relevant content delivered in a rich media format, customized to the interests of the individual. ▪Breadth of content typically limited to location and GIS information.	**High** ▪Geographically relevant content delivered in a rich media format, customized to the interests of the individual. ▪Depth and breadth of content extends beyond location and GIS information.
Consistency	**Low** ▪Large variance in tour guide attitude/knowledge	**Medium to High** ▪Small quality deviations possible based upon a low incident of network/device failure	**Medium to High** ▪Small quality deviations possible based upon a low incident of network/device failure
Cost	**High/Medium** ▪Human resources required to conduct tours and provide tour guide training may be costly. ▪Brochures and signs offer less costly, but less compelling solutions.	**Medium** ▪Basic product requires initial investment in handsets and development of the touring application.	**Medium** ▪Basic product requires initial investment in handsets and development of the touring application. ▪Ancillary services include ongoing touring experience improvement.
Flexibility	**Low** ▪Available only during the times in which touring services operates.	**Medium** ▪Similar to Horizonless, but dependent upon existing Wi-Fi networks. ▪Easy to adapt touring package to changing conditions.	**High** ▪Available anytime; technology may be applied to both wi-fi AND non-wi-fi environmental. ▪Easy to adapt touring package to changing conditions. ▪Solution may be applied to any touring market.
Implementation Ease	**Low** ▪Initial tour design and maintaining a consistent service can be difficult.	**Medium** ▪Initial tour design can be difficult but future tour modifications are easily implemented.	**Medium** ▪Initial tour design can be difficult but future tour modifications are easily implemented.

Direct Competitor Profiles

- **PanGo and Kosmo** http://www.kosmostudios.com/
  - **PanGo and Kosmo, through their recent partnership, is the primary and most direct competitor to Horizonless Solutions**
  - **PanGo/Kosmo promise to offer user customized interactive tours using PDAs and 802.11 data networks – very similar to Horizonless's initial concept**
    - "Kosmo will help PanGo penetrate one of the fastest growing markets for wireless technology," said PanGo President and CEO. Sports complexes, theme parks, zoos and other visitor attractions understand the importance of creating exciting, interactive and personalized experiences for their guests. "

- **Hewlett Packard WebSign** http://www.hpl.hp.com/techreports/2001/HPL-2001-140.html
  - **HP Labs, through their "cool town" initiative are testing prototypes that enable users to find out information about an establishment through their wirelessly enabled IPAQ PDA**
  - **Not a large competitive threat as it is in the very early stages, is very broad - based and consumer oriented, and may be a potential technology provider**

- **Talking Street** http://www.talkingstreet.com
  - **Currently Talking streets uses a user initiated tool free 1-800 call to provide a tour of the lower east side of Manhattan.**
  - **An inferior consumer experience, but a direct competitor**

- **Pal Mickey** https://licensing.disney.com/Login/apps/loginpages/jsp/dcpdl/splash/MickeyPalMickey.jsp
  - **Disney's tour guide – could be a competitor/supplier if Disney chooses to license the technology**

- **Traveler On The Move (TOM)** http://www.aeradio.com.sg/media/clipping.asp?ClippingID=277
  - **Piloted in Singapore, gives selected guests a wireless-enabled PDA with links to historical areas and monuments, shopping, eating and events information**
  - **Supported by the Singapore Tourism board, is an effort to get business travelers to stay longer.**

Indirect Competitor Profiles

Rocky Mountain National Park

- **Ranger Walks park Provided Service free with admission. Optional Group Tour with Ranger.**

Metropolitan Museum of Modern Art
http://www.metmuseum.org

- **Free group guided tours given by museum staff.**
- **The Audio Guide provides interpretive audio programming about the Museum's special exhibitions and permanent collection in a player for a daily rental fee.**

University of Colorado

- **Group tours provided by students knowledgeable about the campus.**
- **"Very worthwhile…it has been many years since I was on campus, but not a lot has changed. It also shows that CU really cares about the students."**

Free Walking Tours of San Francisco.

- **Discover San Francisco neighborhoods on foot! Then learn more at your neighborhood library. If you want to know more about San Francisco, its history, architecture, legends and lore. we suggest you start with a City Guides walking tour.**

Competitor Perception

- **Direct Competition**
  - **A few competitors perceive themselves as a "technological miracle" – a very unique and novel way of doing a tour, breaking previous technology barriers**
    - *From intuitive user interfaces, to award-winning artistry, to state-of-the-art programming, Kosmo specializes in making human interaction with digital media compelling and user-friendly. Kosmo Studios leads the way in "advancing the art of human interactive design."*
    - *PanGo Networks has pioneered the industry's leading technology for location -based services in Wireless LAN environments. The Proximity Platform™ is a patented solution that allows third parties to create, deploy and manage personalized location-based services using short-range wireless networks.*
  - **Others see themselves as more of an experience enriching agent – a way to provide deep contextual understanding of a place**
    - *"I was very aware that I was not appreciating so much of what was surrounding me there," [Founder of Talking Streets] said. "Later I was at an outdoor market where they were selling cell phones, and it occurred to me that a cell phone might offer a solution-a way to reveal these hidden stories and hidden information."*
    - *"We see this as a sort of narrative archaeology," says Jeremy Hight, a poet who wrote the stories in the "34 North, 118 West" program.*

- **In-direct Competition**
  - **Substitute products typically view themselves as a high-end service offering enriching in-depth information**
    - *"Discover winter adaptations within the valley while snowshoeing in a pristine environment. Please bring ski poles and join a park ranger at the Kawuneeche Visitor Center [at Rocky Mountain National Park]."*
    - *"Our [University of Virginia] guides are enthusiastic and extremely knowledgeable about important student-life issues. Though they are not able to take prospective families inside a dorm room, they will answer many questions about residence life, meal plans, and student organizations."*
    - *"Let the Hotel Monaco concierge lead you to the best in Denver "*

Barriers to Entry

- **New Entrant**
  - **Customer Loyalty**
    - Current consumers are used to listening to real people; Administrators are loyal to their current tour operators
    - Some education will be required to get consumers using the new technologies involved; some consumers will be reticent to adopt
  - **Switching Costs**
    - Most target customers already have a human guided touring infrastructure in place
    - Immediate replacement of the current service will not be feasible and an additional touring method may be perceived as too complex
  - **New and Proprietary Technology**
    - Specific technologies are required to implement a touring application; competitors or other companies may have patent protection
    - The technology components are not standard and will require tweaking and customization per application
  - **Capital Requirements**
    - Initial capital investments will be required to prototype and test an initial application before entering the market
  - **Privacy**
    - Customers and organizations may be reluctant to deploy technologies that can monitor consumer location
- **Horizonless Solutions**
  - **All of the above plus…Lack of resources**
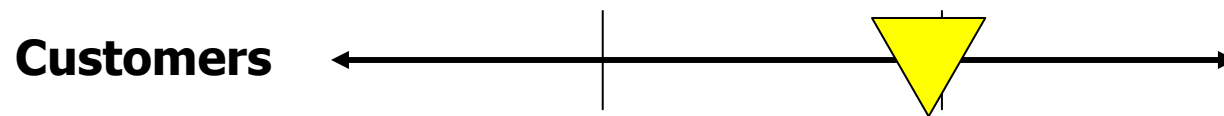   - Horizonless solutions currently does not have capital or intellectual property to begin the venture

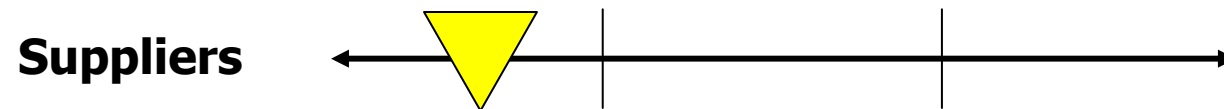# Competitive Forces and Level of Control

Low   **High**
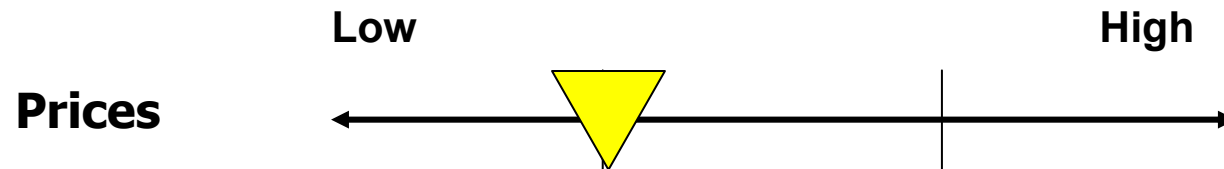
Prices

Due to the large amount of substitute products in this market, we will be price takers.

Costs
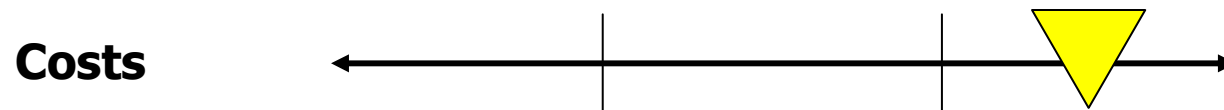
Horizonless will be packaging the solution, hence will have a choice over our components.

Customers

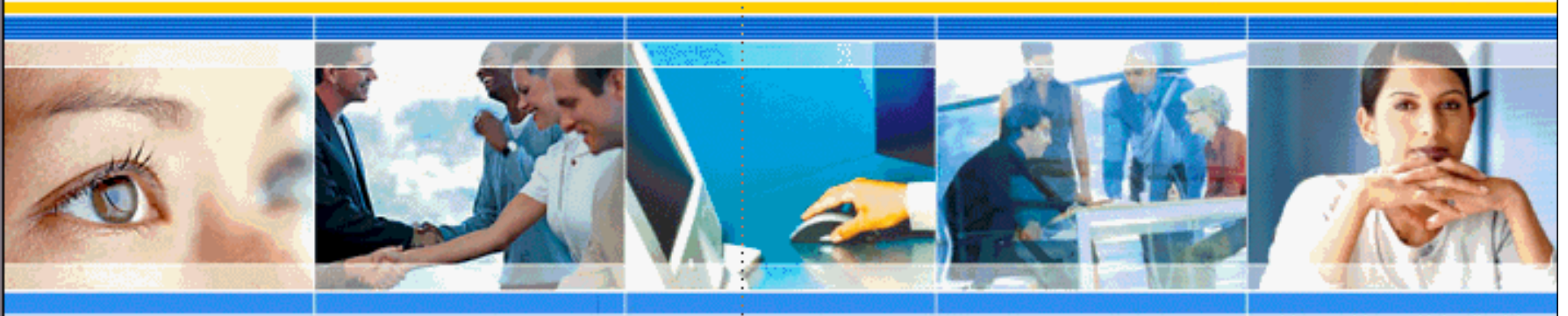Horizonless has a variety of potential niches – no single customer will dominate.

Suppliers

There are few suppliers of the necessary technology.

Distribution

Horizonless, as a customer facing venture, will have a choice of direct or indirect distribution

Exhibits

Horizonless Solutions

Table of Contents

- **EXHIBITS (NOT INCLUDED IN THIS PDF FILE)**
  - **Founder's Biographies**
  - **Additional Opportunities**
    - **Hotel concierge services**
  - **Interviews**
    - **Industry and Customer (19)**
  - **End User Survey**
    - **Questionnaire**
    - **Results**
    - **Raw Surveys (12)**