



Measuring Purchase Intent for Really New Products

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Dr. Phil Hendrix
immr
1 (770) 612-1488
phil.hendrix@immr.org

John Lynch, Duke University
David Alexander, Univ. of St. Thomas
Stuart Drucker, Drucker Analytics

Contents

- § Challenges in Measuring Purchasing Intent for Really New Products
- § Research Program and Study Objectives
- § Model and Hypotheses
- § Study 2a – Research Design
- § Results
- § Discussion
- § Q&A

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We're not in Kansas anymore...

Stunning Display

Surround Sound

Flexible Form Factor

No Longer "just a cellphone"

Broadband Speed

Multiple Networks

GPS

Large storage Capacity

Typable keypad

Long Battery Life



Features/Applications

- § Take/send photographs
- § Record/make a movie
- § Play MP3's/listen to FM, satellite radio
- § Access PIM/PDA
- § Download/view videos
- § Watch television
- § View/listen to e-mail
- § Capture/convert images (business cards, bar codes, etc.)
- § Authenticate (fingerprint, voice)
- § Mobile credit card
- § Monitor home/asset
- § Receive alerts
- § Visit Internet websites
- § Locate friends/family
- § Use "off network"
- § Access information (e.g., museum guide)
- § Monitor health status

“Really New Products” – Research Challenges

Emerging Apps	Connecting, Integrating, or Combining...		
Text messaging	Cellphone	+	Instant messaging
Wireless e-mail	Wireless device	+	E-mail
Camera phone	Cellphone	+	Camera
Mobile music	Cellphone	+	Portable music player
Locate Others	Cellphone	+	GPS
Stay Connected	Wireless device	+	Presence
m-payment	Wireless device	+	Debit/credit card
Context	Wireless device	+	Sensors and agents
Networked Vehicles	Vehicles	+	Wireless, sensors, context, ...
Networked Home	PC's and Broadband	+	TV, Stereo, Security, Appliances...



Challenges
∅ Customers have limited <u>knowledge</u> of product or features
∅ Consumers using existing devices in ways that are new, <u>unfamiliar</u>
∅ Potentially <u>disruptive</u> technology
∅ Considerable <u>speculation</u> about market potential
∅ Significant <u>gap</u> between penetration and potential
∅ Market size, timing <u>uncertain</u>

Growing Number of Apps Further Complicates

Alerts	§ Weather § Other Time Sensitive
Banking	§ Check accounts § Send/receive money § Pay for items
Calling	§ Reliable/problem-free calls in buildings, public places § Free domestic calls § Low-cost internat'l calling
E-mail	§ Read/reply to e-mail
Entertainment	§ FM/Satellite radio § Television (live) § Television + DVR § Music
Functions	§ Electronic Ticketing § Remote – home § Remote – TV § Security Monitor
Games	§ Against others § Individual

Health	§ Track exercise § Medical profile § Monitor condition
Imaging	§ Take/send photos § Record/send video § Video phone
Information	§ Learn/receive instructions
Internet	§ Access/use Internet
Messaging	§ Send/receive text message
Navigation	§ Directions § Real-time Routing § Tour Guide
Services	§ Concierge
Shopping	§ Business Finder § Comparison shopper § Customized offers § Digital Profile
Social	§ Social Networking § Find others' locations

Objectives of Research Program

- ü Better understand adoption and diffusion of RNP's
 - ∅ What consumers will adopt
 - ∅ When consumers will adopt
 - ∅ What drives their adoption
 - ∅ How to influence rate of adoption



ü Measurement

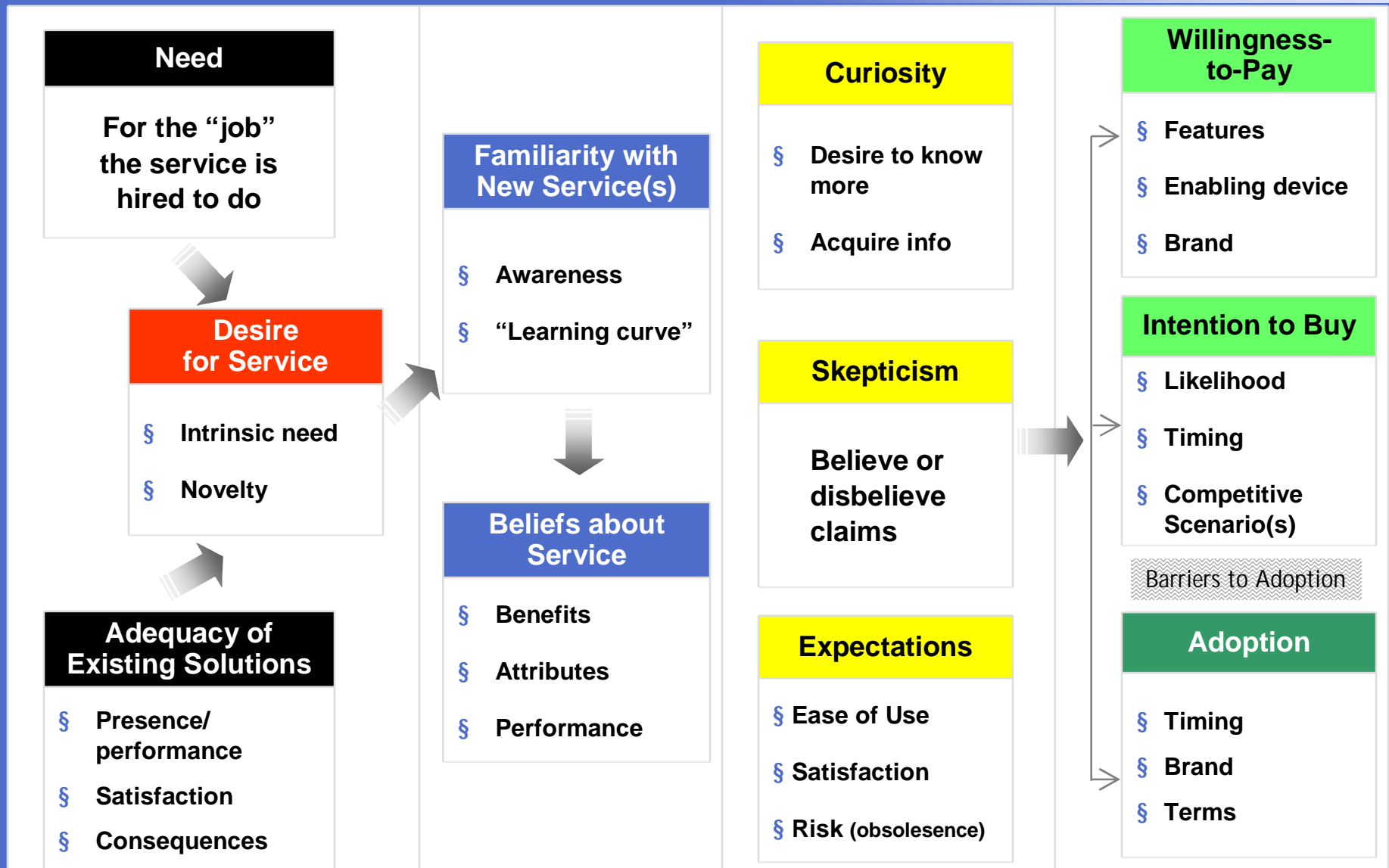
ü Explanation

ü Prediction

Keys to Measuring Purchase Intent for RNP

Key	Approach/Tool	Description
Present Concepts Clearly, Adequately	Concept Elaboration*	Adequately describe and explain concept, features so that respondents understand, can evaluate, and reliably decide
	Multimedia presentations*	Use multimedia to show concept, explain features, highlight benefits
	Interactive prototypes	Especially when usability is “suspect,” develop virtual prototypes that allow consumers to interact with, “use,” experience product
	FAQFind™	Make additional information about concept readily accessible, track how consumers access and use as they “shop” and decide
	Qualitative Pretest*	Verify “usability” of concept descriptions, materials, tasks
Obtain Valid, Robust Measures	Incentive Compatible	Motivate respondents to be “truthful” in answering “will you buy?”
	Visualization	Prompt respondents to visualize whether, when, how they might use
	Robust Choice Models*	Match choice methodology to objectives, task, competitive realities
	User-friendly Choice Tasks*	Create “highly usable” choice tasks using IA (Information Architecture) principles (navigation, iconography, format, colors, etc.)
	Timing measures	Measure when respondents are most likely to adopt
	Adoption Barriers	Uncover barriers to adoption (e.g., contract, switching costs, etc.)
Calibrate Models	Correct for bias*	Correct for bias in Choice, Diffusion modeling
	Disaggregate models	Estimate models at segment level (a priori and derived)
Validate Findings	IQ (Insights from Qualitative)*	Conduct qualitative research to answer “why?” more fully
	Track behavior	Track measures, update model as competitive conditions change

Model of Adoption for Really New Products



Overview of Current Study

Approach	Methodology	Online Survey, using Max/Diff, Experimental Design
Experiment	Factors Manipulated	Phase 2a: Incentive Compatibility, Visualization, BYO Phase 2b: 2a plus Additional Information
Population	Market scope	U.S. - National, w/ geographic quotas
Sample	Eligibility	Internet subscribers, age 18-64
	Sample Size	§ Pilot – n = 200 § Phase 2a – n = 406
	Quota Groups	Quotas for: § Gender § Age
	Segments Examined	Quota groups above, <u>plus</u> : Segments derived from Max/Diff analysis
Methodology	Max/Diff Analysis Manova	Calibrate value of services (metric scale: 0-100) Assess impact of experimental manipulations on PI
MaxDiff	Services described independent of device, network	Services presented in sets of 4 R's shown 12 sets, indicate 'Most' and "Least" appealing in each
Measures/ Data	From survey	§ Data from Max/Diff tasks § Attitudes toward new services (Curiosity, skepticism, perceived maturity, adequacy of existing solutions) § Demographics, psychographics/wireless usage § "Build your own" wireless service exercise
Interviews	Length of online Interview(s)	25 – 30 mins.

Twenty Wireless Services Examined

Name and Tagline

Alerts on your phone* - Stay in-the-know
Business Finder* - Better than the Yellow Pages!
Camera+Video phone - Take photos, record movies, see your friends
Cell Phone that works on Wi-fi - Landline quality, low-cost calling
Connected and In-touch (via Facebook, Myspace, Flickr, etc.)
Digital Profile - Share your profile, electronically
Electronic Offers* - Coupons and offers you can use
E-mail - E-mail on the go
Health Assistant - Monitor exercise, vital signs
Locate others* - Find your friends and associates
Mobile Games - Play games, compete
Mobile Internet - Take the internet with you
Mobile Music - Enjoy your music
Mobile Navigation* - Maps, Directions on your phone
Mobile TV - Take your TV with you
Mobile Wallet - Pay with your phone
Price/Review Checker* - Pricing and Reviews at your fingertips
Security monitor - Check in on people, possessions
Text Messaging - Stay in touch, even when you can't talk
TV/Home Remote - Manage your TV and home when away

Respondents were given a Brief Description of each

For Example:

Alerts on your phone* - Stay in-the-know

Receive alerts containing time sensitive information important to you. Examples include notification if bad weather is approaching; news; change in stock price; item available on eBay; etc.

Experimentally Manipulated Factors

Factor	Objective	Description
Incentive Compatibility	Motivate respondents to be "truthful" in responding to PI questions	<p>In just a moment you will be shown a Choice Set with different versions of new wireless services for your cell phone and monthly prices for each. Upon completing the survey, you will be entered into a drawing, along with other respondents to the survey - should you win the prize drawing, you will receive:</p> <ol style="list-style-type: none"> 1. A one-year subscription to each of the new services that you select in the Choice Set, and a new cell phone that gives you access to the services; plus 2. The balance of \$1,000, minus the cost of the phone and services in (1), in cash <p>NOTE ON CALCULATION OF CASH PRIZE: Your chances of winning the drawing are about 1 in 1,000. Should you win, an amount equal to the cost of a one-year subscription to any of the services that you select to purchase in the Choice Set, plus the cost of the cell phone required by the services, will be deducted from the \$1,000 winnings - the balance of the \$1,000 will be paid to you in cash.</p> <p>IMPORTANT: If you do not win the drawing, you are not obligated to purchase anything. However, it's best to make your selections in the Choice Set assuming you might win and select only those services that you would really choose to purchase, and vice versa.</p>
Visualization (Alerts, Locate, Offers, Navigation)	Prompt respondents to consider potential usefulness of service	Thinking back over the last month, can you think of any situations in which having Electronic Offers and Coupons on your Cell Phone would have been useful? (Electronic offers allows you to receive offers and coupons from businesses you select when and where you are most likely to use them - e.g., nearby, entering the store, etc.). Please describe the situation, and how Electronic Offers would have been useful.
Build Your Own	Show versions, prices Allow respondents to choose from set of services	See next page



Build Your Own Exercise

		Price/month of any Services Selected ➡	\$0.00	Click buttons in grid and price will update
Service	Versions and Price per Month			Would Not Choose Service
1 Alerts on your phone	Signup, receive alerts on your cell phone Normal charges for text messaging apply			
Check which, if any, you would choose? ➡		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2 Cameraphone - Camera, camcorder, and videophone	a. Cameraphone with Picture Messaging; photos uploadable to password protected website. Includes up to 200 photos month \$5.00	b. (a) plus Camcorder, with lengthy video files transmitted to password protected website. Includes up to 1 hour of video/month \$10.00	c. (a) and (b), plus videophone feature that allows you to see the person you are speaking with \$15.00	
Check which, if any, you would choose? ➡		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 Connected and In-Touch	One-click connection to your MySpace, Facebook, Flickr, and similar sites Normal charges for accessing the internet apply			
Check which, if any, you would choose? ➡		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 Digital Profile - Share your profile, electronically	a. Store, share your information with selected recipients (participating businesses, individuals).	(a), plus contents of your digital profile backed up on network. Should you lose your phone, your profile information can be "locked." Website provided to manage, "synch" your information.		
Check which, if any, you would choose? ➡		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Unlimited Text Messaging \$2.50/month	Unlimited Text Messaging \$5.00/month	
Check which, if any, you would choose? ➡		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 Wi-fi Enabled Phone - Landline quality, low-cost calling (when calling within the Wi-fi network). Domestic calls are free, int'l calls are very inexpensive	a. Works with your home Wi-fi network and broadband service. Local/domestic LD calls from home are "free" (e.g., do not count against your wireless plan minutes) *Requires broadband in your home \$10.00	b. Works in your home and participating hot spots (public places with Wi-fi) authorized by your wireless provider. Local/domestic LD calls at home and in participating hot spots are "free." \$15.00	c. (b), plus the ability to use in any building or location with a Wi-fi network available to the public. Local/domestic LD calls in any of the locations are "free" (do not count against your wireless plan minutes). \$20.00	
Check which, if any, you would choose... ➡		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Service Desirability/Need - MaxDiff (Phase 1)

Mobile Navigation* - GPS, Directions on your phone	84.2%
Cameraphone - Camera, camcorder, and videophone	80.9%
Text Messaging - Stay in touch, even when you cant talk	79.0%
E-mail - E-mail on the go	74.0%
Mobile Internet - Take the internet with you	71.2%
Cell Phone that works on Wi-fi - Landline quality, low-cost calling	61.2%
Contacts Availability - Stop playing phone tag	60.6%
Alerts on your phone* - Stay in-the-know	53.7%
Locate others* - Find your friends and associates	52.0%
Mobile Music - Your Music on your Cell Phone	50.1%
Business Finder* - Better than the Yellow Pages!	48.1%
Health Assistant* - Monitor exercise, vital signs	44.1%
Security monitor - Check in on people, possessions	43.8%
Mobile TV - Take your TV with you	31.7%
Mobile Wallet - Pay with your phone	31.5%
Mobile Games* - Play games, compete against others	30.2%
Price/Review Checker* - Pricing and reviews at your fingertips	29.4%
TV/Home Remote - Manage your TV/home when away	27.6%
Electronic Offers* - Coupons and offers you can use	22.6%
Digital Profile* - Share your profile, electronically	13.6%

Current Penetration of Wireless Services

Current Penetration	
Service	Pct
Text Messaging	50%
Cameraphone	17%
Mobile Internet	12%
Alerts on your phone	3%
Cellphone that works on Wi-fi	3%
Connect with others	2%
Mobile Navigation	1%
Mobile TV	1%
Electronic Offers	1%
Mobile Music	1%
Locate others	0%
Security monitor	0%



Newness, Skepticism Ratings (Phase 1)

	PI	Category	Service	"Newness"	Need	Skepticism
20	1	Information	Mobile Navigation	Low-Med Newness	High Need	High Skeptical
19	1	Imaging	Cameraphone	Low - Newness	High Need	Low-Med Skeptical
18	1	Messaging	Text Messaging	Low - Newness	High Need	Low-Skeptical
17	0	Messaging	E-mail	Low-Med Newness	High Need	Low-Med Skeptical
16	1	Information	Mobile Internet	Low - Newness	High Need	Low-Med Skeptical
15	1	Calling	Cellphone that works on Wi-fi	Low-Med Newness	Medium Need	High Skeptical
14	1	Connecting	Connect with others+++	Medium Newness	Medium Need	Medium Skeptical
13	1	Information	Alerts on your phone	Low-Med Newness	Medium Need	Low-Skeptical
12	1	Connecting	Locate others	High Newness	Medium Need	Low-Med Skeptical
11	1	Entertainment	Mobile Music	Low - Newness	Medium Need	Low-Skeptical
10	0	Shopping	Business Finder	Low-Med Newness	Low-Med Need	Low-Skeptical
9	0	Lifestyle	Health Assistant	High Newness	Low-Med Need	Medium Skeptical
8	1	Control	Security monitor	High Newness	Low-Med Need	High Skeptical
7	1	Entertainment	Mobile TV	Medium Newness	Low-Med Need	High Skeptical
6	0	Banking/payment	Mobile Wallet	High Newness	Low-Med Need	Low-Med Skeptical
5	0	Entertainment	Mobile Games	Low - Newness	Low - Need	Low-Skeptical
4	0	Shopping	Price/Review Checker	Medium Newness	Low - Need	Medium Skeptical
3	0	Control	TV/Home Remote	High Newness	Low - Need	High Skeptical
2	1	Shopping	Electronic Offers	Medium Newness	Low - Need	Medium Skeptical
1	0	Shopping	Digital Profile	Medium Newness	Low - Need	Medium Skeptical

Measurement Manipulations - Significance

Factor	F Statistic	df	p value
Incentive Compatibility	19.9	1	< .0001
Visualization	7.1	1	.0079
Build Your Own	118.8	1	< .0001
Other Results			
Interactions x Svc: IC, Visualization, Build Your Own	Two-way Interactions Not Significant		
Services	71.8	11	< .0001

Mean PI Ratings x Experimental Group

Services	Total
	A
Mobile Navigation	36%
Mobile Internet	31%
Cellphone on Wi-fi	30%
Cameraphone	30%
Text Messaging	29%
Electronic Offers	23%
Alerts	22%
Locate Others	19%
Mobile Music	17%
Mobile TV	16%
Security Monitor	14%
Connect w/ Others (Facebook)	12%



Mean PI Ratings x Experimental Group

Services	Total	Not Incentive Compatible			
	A	B	B-A	C	C-A
		BYO NO	Delta	BYO YES	Delta
Mobile Navigation	36%	38%	2%	36%	0%
Mobile Internet	31%	31%	0%	32%	0%
Cellphone on Wi-fi	30%	27%	-3%	28%	-2%
Cameraphone	30%	26%	-4%	22%	-8%
Text Messaging	29%	21%	-8%	24%	-6%
Electronic Offers	23%	27%	5%	13%	-10%
Alerts	22%	13%	-9%	20%	-2%
Locate Others	19%	18%	0%	15%	-3%
Mobile Music	17%	10%	-7%	19%	2%
Mobile TV	16%	17%	1%	14%	-2%
Security Monitor	14%	9%	-5%	12%	-2%
Connect w/ Others (Facebook)	12%	13%	1%	10%	-2%
			-2%		-3%

Mean PI Ratings x Experimental Group

Services	Total	Not Incentive Compatible				Incentive Compatible			
	A	B	B-A	C	C-A	D	C-A	E	E-A
		BYO NO	Delta	BYO YES	Delta	BYO NO	Delta	BYO YES	Delta
Mobile Navigation	36%	38%	2%	36%	0%	46%	10%	27%	-9%
Mobile Internet	31%	31%	0%	32%	0%	47%	15%	20%	-11%
Cellphone on Wi-fi	30%	27%	-3%	28%	-2%	42%	12%	24%	-6%
Cameraphone	30%	26%	-4%	22%	-8%	43%	14%	31%	2%
Text Messaging	29%	21%	-8%	24%	-6%	26%	-3%	41%	12%
Electronic Offers	23%	27%	5%	13%	-10%	38%	15%	20%	-3%
Alerts	22%	13%	-9%	20%	-2%	42%	20%	17%	-5%
Locate Others	19%	18%	0%	15%	-3%	25%	6%	17%	-2%
Mobile Music	17%	10%	-7%	19%	2%	28%	11%	13%	-4%
Mobile TV	16%	17%	1%	14%	-2%	20%	3%	15%	-2%
Security Monitor	14%	9%	-5%	12%	-2%	18%	4%	16%	3%
Connect w/ Others (Facebook)	12%	13%	1%	10%	-2%	12%	0%	14%	2%
			-2%		-3%		9%		-2%

Presenter's Bio

Dr. Phil Hendrix

Director, immr

www.immr.org

+1 (770) 612-1488

phil.hendrix@immr.org

Dr. Phil Hendrix is the founder and director of immr (the institute for mobile markets research), a research organization focused on strategic issues in emerging wireless/mobile markets. He specializes in helping organizations calibrate demand and accelerate the adoption of really new products. Dr. Hendrix has developed perspectives and research-based tools to help clients uncover hurdles slowing adoption, trigger interest and adoption among prospects, and optimize the features and pricing of new products and services. Much of his work incorporates innovative research approaches (qualitative and quantitative) to develop new insights and guide decisions. He has developed and led significant engagements, often involving multiple business units, with leading clients in telecommunications (AT&T, BellSouth, Cingular, Verizon, and SBC), financial services (American Express), transportation (UPS), health care and insurance (Allstate, UnitedHealth), and others.

Before founding immr, Phil was a partner with DiamondCluster (strategy and technology consultancy), founder and head of IMS (Integrated Measurement Systems), and a principal with Mercer Management Consulting. He has held faculty and research positions at Emory University and the University of Michigan, teaching courses in research design and analysis, buyer behavior, and strategy, and the Survey Research Center at U of M. After receiving his PhD from the University of Michigan, Dr. Hendrix completed post-doctoral studies in applied statistics and mathematical psychology.

Phil lives in Atlanta, Georgia, with his wife and three children.

Appendix – Services Rated on RNP Items

List of Services Examined in Phase 2 of MaxDiff Study							
		Sections of Q'aire					
		Included in MaxDiff	Visualization	FAQFind	Purchase Intent	RNP Questions (13/item)	
Svc #	Svc Name	20	3	12	12	12	↩ Total # of Svcs
S01	Alerts on your phone	Y					
S03	Cameraphone	Y					
S04	Contacts' Availability**	Y	Note:				
S06	Electronic Offers	Y	All 20 items included in MaxDiff				
S10	Locate others	Y	3 selected from "top 12" items for Visualization				
S12	Mobile Internet	Y	8 selected from "top 12" for FAQFind (R selects which, if any, (s)he will view				
S13	Mobile Music	Y	8 from "top 12" for purchase intent questions				
S14	Mobile Navigation	Y	8 from "top 12" for 13 RNP ratings				
S15	Mobile TV	Y					
S18	Security monitor	Y					
S19	Text Messaging	Y					
S20	Wi-fi Enabled Phone	Y					



Appendix – RNP Items

Final			
D2.8	CURIOSITY	C1.	I am curious about this service
D2.9	CURIOSITY	C2.	I am interested in learning more about this service
D2.11	EXPECTATIONS	E1	This service sounds like it could be difficult to use
D2.12	EXPECTATIONS	E3	I would expect my experience using this service to be problem-free
D2.1	INFORMED	IN1.	I am familiar with this service
D2.2	INFORMED	IN2.	I am knowledgeable about this service's features, prices, reliability, etc.
D2.10	MATURITY	E4	I would expect this service to be much better or cheaper in 12-18 months
D2.3	NEWNESS	PN1.	I understand how this service would benefit me
D2.4	NEWNESS	PN2.	I understand the tradeoffs among the pros and cons to consider before buying
D2.5	NEWNESS	PN3.	I'd have to change my behavior significantly to attain the potential benefits of this new service
D2.6	NEWNESS	PN4.	Using this new service would allow me to do things I can't easily do now.
D2.7	SKEPTICISM	S1	I am skeptical of the claims about what the service will deliver.
D1.13	SKEPTICISM	E2	I am confident this service will perform as promised