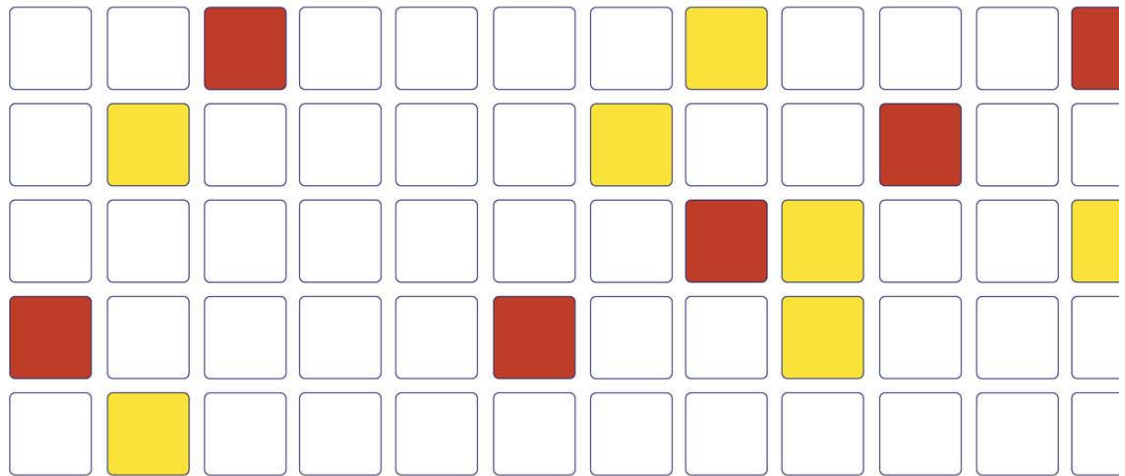




Fastap™ Keypad: Demand and Impact

Usability Assessment
September 2004



Executive Summary



In September, 2004, *iGillott*Research conducted two focus groups in a Boston, MA suburb to assess the interest in and impact of the Fastap Keypad, a new mobile handset keyboard design by Digit Wireless. The goals of the research were to:

- Understand consumer acceptance of benefits of the Fastap keypad in mobile applications, especially messaging
- Determine if Fastap could increase the use of text messaging, handset features and functions, and other operator services
- Assist with understanding the retail positioning of Fastap handheld devices
- Identify how Fastap changes the store appeal of the handset and the consumer's willingness to pay for the design.

The two groups comprised consumers aged 24 to 35 years who used their handsets daily for voice calls and, in the case of the second group, used text messaging at least twice per week. Digit Wireless was not involved in the selection of the focus group participants.

Participant Experience

Of those participants who used text messaging, most found 'triple tapping' to be a frustrating experience. One participant noted that a message could take a long time to type if "you have to say a sentence and cannot cut (abbreviate] words." Those participants who did not use text messaging pointed to the frustrations of using a 12-key keypad as one of the reasons. Some had used T9 predictive text software but noted that the application "never gave you the word you want" and that using the solution could take longer than triple tapping, since the needed word had to be selected from a list.

Fastap Usability

Participants liked the overall concept, the appearance and the separate letter buttons.

The reactions to the Fastap-equipped handsets were consistently positive. Participants liked the overall concept, the appearance, and the separate letter buttons. Initially, some thought the design was 'busy', but this factor was dismissed when shown a subsequent design that used color to differentiate the two types of keys (alpha and numeric) more clearly. Both groups preferred this second design. Although they were cautious about hitting the alpha keys with either design handset when dialing a number, after brief hands-on experience these concerns almost completely disappeared. In general, participants ranged from neutral to positive regarding the alphabetized layout of the letter buttons.

The format for the focus groups was divided into three (3) stages:

- 1) Discussion of current experience and usage of data related applications
- 2) Visual and hands-on use to collect impressions of a Fastap equipped handset
- 3) Discussion of practical feature highlights and benefits from both a retail sales and customer perspective.

Implications for Mobile Applications and Services

As usage increased, so did the comfort level and the participants became converts.

After the participants used a Fastap handset to dial a phone number, most initial concerns were overcome. Once they understood that accidental pressing of letter buttons when pressing a number key is resolved by the Fastap software, the final few concerns were put aside. As usage increased, the **comfort level increased and the participants became advocates. This hands-on familiarity required less than two minutes with most participants.**

Somewhat surprisingly, there was not a significant difference in the responses between those experienced with text messaging and those who were not. Both groups seemed equally positive toward the technology. The summary impression from both groups was:

- All but one participant (a self-proclaimed expert 'triple tapper') thought the Fastap design made sending a text messaging much easier, and they would likely do it more often.
- All but one (the same participant as above) said they would be more likely to respond to a text message if they had a Fastap phone.
- All but one participant (not the same person as above) said that their use of MMS, handset features, and other services, such as Web access, would likely increase with Fastap.

Financial impact

The feedback from participants in this research indicates that the Fastap handsets could positively impact wireless operator revenues in a number of ways. These areas fall into the general categories of: increased text/data usage by existing users; adoption of text/data applications by non-users; improved customer retention; reduced customer acquisition costs.

Assuming the profile of a fictitious carrier with 10 million subscribers (detailed in the "Financial Impact" section starting on page 12) a conservative estimate would yield additional data revenue of US\$39.2 million in year one (an uplift of 5 percent), US\$98 million in year two (12.5 percent increase) and US\$173.4 million in year three (22.2 percent increase) for a total of US\$310.6 million over three years.

Summary

*iGillott*Research provided two focus groups, each with a range of text messaging familiarity/experience, the opportunity to examine and discuss mobile handsets equipped with Fastap keypads. With minimal instruction, potential users quickly familiarized themselves with functionality and operation and overcame any initial concerns. Based upon the ensuing discussion, it is the belief of *iGillott*Research that there could be rapid market acceptance of this approach to solving the data/text entry problems associated with standard 12 key devices.

The potential revenue impact for wireless carriers is significant. With conservative adoption rates, the estimated service revenue over three years could reasonably be well in excess of US\$300 million for each 10 million subscribers, equivalent to an **increase of 1.6 percent in total service revenue.**

This increase in service revenues is **equivalent to the total service revenue from an additional 160,367 subscribers**. In other words, the operator would have to increase its subscriber base by over 160,000 users for three years to match the potential revenues generated simply by offering handsets equipped with Fastap.

Methodology

Digit Wireless retained *iGillott*Research to conduct primary market research to:

- Understand consumer acceptance of the benefits of the Fastap keypad in mobile applications, especially messaging
- Determine if Fastap might increase the use of text messaging, handset features and functions, and other operator services
- Assist with understanding the retail positioning of Fastap handheld devices
- Identify how Fastap changes the store appeal of the handset and the consumer's willingness to pay for the design.

*iGillott*Research conducted two focus groups in a Boston, MA suburb in September, 2004 to assess the interest in and impact of Fastap keypads for data entry. The two groups comprised consumers aged 24 to 35 years who used their handsets daily for voice calls and, in the case of the second group, used text messaging daily or at least a couple of times per week. It is important to note that Digit Wireless was not involved in the selection of the focus group participants.

The profiles of the two groups were as follows:

- First group - ten attendees
 - Age between 24 and 35 years, with six attendees aged 30 years or more
 - Three participants used Cingular, four used Sprint, two had T-Mobile and one used Verizon Wireless
 - Five participants used SMS rarely (one or two times per month), with the remainder knowing about SMS but not using the service
 - Eight of the participants made more than 20 voice calls per week and two made between 10 and 20 calls
 - Four participants had purchased a new mobile handset in the last year, four were using a handset aged between one and two years and the remainder had handsets aged two to three years.
- Second group - eleven attendees
 - Age between 24 and 33 years, with three attendees aged 30 years or more
 - Four participants used Cingular, two used AT&T Wireless, one used Sprint, one had T Mobile and three used Verizon Wireless
 - Six participants used SMS daily, with the remainder sending one or two SMS per week.

Each session lasted two hours and was recorded on Video. Handsets with Fastap were available during the sessions for the participants to examine.

The focus group's discussion went as follows:

- Opening
- Introductions
- Use of Existing Handset

- Functions used and how often
- Applications and services used and how often
- Issues with current keyboard design and limitations for using other applications and services
- Use of SMS
 - Sending and receiving text messages
 - Text input methods and applications
- Fastap Keyboard Design
 - First impressions
 - Usability to enter phone number and text messages
 - Usability for other functions
- Device Pricing and Marketing
 - Value of handset with Fastap
 - Expected pricing
 - Market positioning
 - Effect on churn
- Close.

About *iGillott*Research

*iGillott*Research is a market strategy consultancy *focused* on the wireless and mobile communications industry. Founded by Iain Gillott, one of the wireless industry's leading analysts, we research and analyze the impact new wireless and mobile technologies will have on the industry, on vendors' competitive positioning, and on our client's strategic business plans.

Our clients typically include service providers, equipment vendors, mobile Internet software providers, wireless ASPs, mobile commerce vendors, and billing, provisioning, and back office solution providers. We offer a range of services to help companies improve their position in the marketplace, clearly define their future direction, and, ultimately, improve their bottom line.

A more complete profile of the company can be found at www.igillottresearch.com.

Disclaimer

The opinions expressed in this white paper are those of *iGillott*Research and do not reflect the opinions of the companies or organizations referenced in this paper. All research was conducted exclusively and independently by *iGillott*Research.

Service and Application Use

Each of the groups was first asked how they used their current handsets, which services and applications they used, and their frustrations about their usage. The first group of participants (Table 1) reported using mainly voice-centric applications, such as the phone book (nine respondents used once per day) and voicemail (all used at least once per day). Note that in this group the use of text messaging and Web access is very low.

Table 1: Application use in Focus Group One

Application or Service	Used once or twice	Use 1 – 3 times per week	Use once per day or more
Voicemail			10
Phone book			9
Voice dial	2		
Email	1		
Text messaging	4	2	
Web/sports	1		
Games	1	4	1
Ringtones	1		
Calendar		1	
Speakerphone			2
Calculator		1	
Alarm clock			1
One touch dialing			4

Number of participants using each application

Source: *iGillott*Research Boston Consumer Focus Groups, September 2004

A number of participants also noted they rarely dial a phone number – most use speed dial numbers or the phone book in the phone. Other comments made by the first group about various applications included:

- Few participants had tried email on the mobile handset – most did not know they could send and receive email.
- Entering a text message was “difficult.”

- The few participants that were using SMS in this group were sending messages as instructions – e.g., call home, run an errand, etc. – but comments such as “I hate text messaging” were common. Most said that it was “easier to pick up the phone” to leave a message for someone. Responding to an SMS was “too hard to type the response in.” SMS was generally frustrating to this group because it is hard to input text and it “takes forever to triple-tap.” Another said “it gets tedious.”
- There was nearly unanimous lack of interest in mobile internet access. The exception was an interest in general news or sports results where the message was brief enough to display easily or that did not require much “typing.” One participant said that they “did not use [it] as much as [they] expected” at least partly because interaction was difficult.
- Gaming was popular with three ‘soccer Moms’ who were playing games on their phones a couple of times per week while waiting for their children.
- Instant messaging was used by a couple of participants for personal and business use on their desktop computers. No participants had used Instant Messaging (IM) on the mobile handset.

Usage of text messaging was much higher in the second group (this group was screened by their high SMS usage) and as a result, the use of other non-voice services is much higher than in the first group (Table 2). In fact, the second group did not even list voicemail as a value-added service. Remember that this group is also younger, with most participants aged below 30 years.

Table 2: Application use in Focus Group Two

Application or Service	Used once or twice	Use 1 – 3 times per week	Use once per day or more
Phone book			11
Voice dial	1		1
Email	2		1
Text messaging		5	6
Web/sports			5
Games	1	4	
Ringtones			6
Calendar		1	
Key guard			4
Calculator		1	4

Application or Service	Used once or twice	Use 1 – 3 times per week	Use once per day or more
Alarm clock	2		2
Call log/ID			11
Speed dial	1	2	8
Camera	1	1	

Number of participants using each application

Source: *iGillott*Research Boston Consumer Focus Groups, September 2004

As with the first group, those who used text messaging found 'triple tapping' to be a frustrating experience – comments such as "frustrating" and "a pain" were heard in the second group. One participant noted that a message could take a long time to type if "you have to say a sentence and cannot cut (abbreviate) words." Those who did not use text messaging pointed to the frustrations of using the keypad as one of the reasons.

Those who used text messaging found 'triple tapping' to be a frustrating experience.

One of the participants in the second group claimed she was a triple tapping expert and could send a message while driving, without looking at the keyboard.

A few participants in the second group had used T9 predictive text software but noted that the application "never gave you the word you want" and that using it could take longer than triple tapping, since the needed word had to be selected from a list. Other comments were that T9 "takes longer", is "frustrating", and "is a pain."

Fastap Usability

To introduce the Fastap keypad to the two groups, two identical LG prototype handsets were passed around between the participants – each was asked to look at the device for a few seconds and then write down their initial impressions (Table 3).

Participants liked the separate buttons and overall concept. Initial impressions were that the design was “busy” which was mainly attributed to the similarity of colors for number and letter keys.

The initial reactions to the Fastap-equipped handsets were positive, although there were some reservations about hitting the letter keys when dialing a number. Participants liked the separate buttons, the overall concept, the appearance and the illuminated buttons but thought the design was “busy,” which was at least partly attributed to the fact that the sample shown used the same colors for numbers and letters.

Table 3: Visual Impressions of Fastap keypad (prior to use)

	Likes	Dislikes
First Group (non-users of SMS)	<ul style="list-style-type: none"> - Individual letter buttons - Good size screen - Stylish design - Text keys on keyboard - Durable/sturdy feel - Interesting keyboard design - Would make it easier to enter names, etc - Separate letter and number keys - Letter keys 	<ul style="list-style-type: none"> - Too many buttons - Buttons too close together - Small print on letter buttons - Small Buttons - Complicated keys - Keys could be confusing - Possible mistakes pressing number keys - Buttons too small - Buttons close together - Hard to hit number keys - Proximity of letter and number keys
Second Group (SMS users)	<ul style="list-style-type: none"> - Full alphabet on keyboard - One button for each letter - Letters – own buttons - Keypad – letters - Letter buttons - Buttons light up 	<ul style="list-style-type: none"> - Too many buttons - Buttons - Dialing, could hit wrong key because of letter keys - Key pad - Too many buttons - Buttons too close to each other - Buttons tight - Press buttons accidentally – too close together - Buttons

Source: *iGillott*Research Boston Consumer Focus Groups, September 2004

Many participants were concerned that when dialing a phone number they might hit a letter key by mistake. They also felt there was too much similarity between the number keys and the Send/End keys. The size of the letter buttons was also a concern, as were the font and color of the letters. A more advanced design shown later was recognized as addressing these concerns by differentiating the two types of keys more clearly.

The participant's feedback to these alternative designs indicates that the color, key size, backlighting and contrast between the letter and number keys are very important to the usability of Fastap.



The next exercise was to use a production-quality handset to enter phone numbers and text messages. Each participant was given a handset and asked to dial 617-555-1234. All participants said they were being careful when they dialed and all got the number correct.

The groups were then asked to dial quickly, without regard for extra care to avoid hitting the letter keys. All but one of the participants still got the number correct. They realized quickly that the phone keyboard is intelligent, in that if some of the letters surrounding a number key are pressed, the number still shows on the screen. With more use, participants quickly became familiar with the keyboard and were entering numbers without concern for hitting adjacent letters.

The next task was to enter the text message "I will see you at home 9 tonight." Again, all respondents entered the message correctly, with comments such as "I like it," "Good, easy to use" and "easy to use." One participant noted that she had difficulty using the letter keys because of long nails.

Overall, the more the groups used the Fastap keypad, the more natural it felt and the more they liked it. With experience, the usability increased. One said it was "real good, much better than anticipated, even with my big hands", "makes it easier to enter names", "first I did not like [the design], but thought I could get used to it". Note that this respondent expressed a desire to buy the Fastap handset at the end of the session.

Final notes of endorsement came from two participants. One who was already using SMS but was frustrated with the text input stated, "I would use this any day of the week compared to a traditional 12-key keypad." The other, an occasional SMS user, stated, "This is a slam dunk" choice over standard keypads.

"I would use this any day of the week compared to a traditional 12-key keypad."

Impact on Mobile Applications and Services

After the participants used the Fastap handset to dial a phone number, most of them overcame their initial concerns. Once they realized that while aiming for a number, hitting the letter keys around a number still established a number on screen, the final few concerns were put aside. As usage increased, the comfort level increased and the participants all became advocates. This comfort level came with no instruction and was based on approximately two minutes of use by participants.

All but one participant (the self-proclaimed expert triple tapper) thought the Fastap design made text messaging much easier.

Text messaging was “easier” on the Fastap keyboard “when I get used to it.” All but one participant (the self-proclaimed expert “triple tapper”) thought the Fastap design made text messaging much easier.

The exercise led to a discussion as to whether usage of value-added services and applications would increase with Fastap. Participants said that with Fastap they would be more likely to respond after receiving a text message, as opposed to just calling. All said that their use of text messaging, MMS, handset features, and other services, such as Web access, would increase with Fastap. Response from the two groups was essentially the same, as filtered through their own experience level:

- Those that currently used text messaging and other services said that their usage would increase.
- Those that were not using text messaging at present said that they would be more likely to start, or to respond to a message with Fastap.

Fastap was seen as increasing usage of all phone functions, not just text messaging.

Notably, Fastap was seen as increasing usage of all phone functions, not just text messaging. For example, when asked specifically about increased use of the phone book, one participant said “oh, yeah!” Participants were also more likely to use MMS.

The net effect of additional MMS/SMS/feature usage can be dramatic for a wireless operator. Since entering data is easier with a Fastap keypad:

- There is likely to be an increase in text messaging by existing text messaging users
- There is likely to be an accelerated increase in adoption of text messaging by current non-users
- There is likely to be an increase in additional applications – e.g., calendars, games, IM, emails, etc. – by all users
- There is likely to be increased usage of the phone book. While this may not directly lead to additional service revenues, users with more phone book entries in their handsets are known to churn at a lower rate (ref: *iGillott*Research report 082004-02 *Worldwide Mobile Handset Forecast*, August, 2004).

A more detailed financial analysis appears in the “Financial Impact” section.

Handset Marketing and Positioning

During the focus groups, participants were asked to imagine they were in a store shopping for a new handset and considering two handsets, one with Fastap and the other with a 12-key keypad design. The question was asked in two parts: firstly, the participants were asked to choose between two handsets with equivalent features and functionality (without regard to brand, size, cost, design or carrier), one with Fastap and the other with a 12-key keypad design. All but two of the participants said they would choose the newer design. Reasons for choosing the Fastap design included the perception that it was “the latest technology,” “easier to use”, and this design was “cooler.”

The second part of the question took into account the fact that the overall design of the handset was a major factor in the decision. The availabilities of a camera, a quality screen and a “sleek design” were all major influencers, together with the inclusion of Fastap. When asked to choose between a Fastap phone and a comparable phone with a standard 12-key keypad from the same manufacturer and carrier, **the handset equipped with Fastap was selected by every participant.**

Participants said that, imagining they were the sales person, they would focus on the increased ease of use of the Fastap handset for text messaging as the key differentiator.

As another exercise, the participants were asked to imagine they were the sales person selling the Fastap handset. They said they would focus on the improvements in ease of use for text messaging as the key differentiator. They would also show the prospect that they were using the handset themselves since personal recommendation by an existing user is a major factor when choosing a new device.

If the prospect was not using text messaging, the participants said they would use the ease of use of a Fastap handset to position the use of text messaging as a viable communication method. Ease of use of other handset features (e.g., address book) and the fact that the handset included advanced features were additional selling points.

All participants commented that Fastap was “the way to go” and that in time, all devices would be available with a keyboard offering this level of functionality. Fastap was seen as “the future” and a consumer using such a device was seen as having the latest technology. Innovation, fashion, style and “the cool factor” are also critical considerations.

Handset pricing

Each group was asked what they thought would be the price difference between a standard handset and one equipped with the Fastap keypad. To keep the analysis simple, the participants were asked to compare a Fastap device to a handset with equivalent features from the same brand. Variables such as the requirement to commit to a contract, rebates, or a specific rate plan were not part of the consideration. All were given the option of saying “no difference” or of saying that the Fastap device was worth less than the traditional design.

All participants said they would expect that the Fastap device would be US\$20 - US\$70 more than a standard handset.

In each group, all participants said they would expect the list price to be between US\$20 and US\$70 more for the Fastap handset. In the first group (low SMS usage), the range was from US\$20 to US\$50 additional, with an average of US\$38 extra for the Fastap device. In the second group of SMS users, the range was from US\$20 to US\$70, with an average of US\$40.

While focus groups rarely protest additional costs or fees, it is worth noting that this is a significant percentage increase considering the group was predominately non-users who currently have decided to NOT use text messaging even though they have access to it. It indicates that any nominal cost increases incurred by device manufacturers and/or carriers should be easily recovered in the marketplace.

Financial Impact

The potential financial impact of Fastap may be realized several ways:

- Increased ARPU through additional usage by current data users of *current* data applications.
- Increased ARPU through adoption of additional services by current data users.
- Increased ARPU by non-data users starting to use data services.
- Reduced subsidy on the handset.

Although some positive effect on churn may be expected, the participants in the focus groups indicated that the choice of handset model was not a primary factor in deciding service provider. The primary motivations for whether to leave a carrier or which new one to join are coverage and service quality, followed by price. A poor customer service experience will usually prompt a consumer to consider a switch, but the assessment of the new operator is based on coverage and pricing. Assuming equality with these two primary considerations, the groups expressed that device features in general and Fastap availability in particular could be a deciding factor in retention in their existing provider or of guiding selection of a new service providers.

Consider the case of an operator with 10 million subscribers and the following assumptions:

- 25 percent use wireless data and content services before Fastap
- 75 percent do NOT use wireless data and content services before Fastap.

A typical North American operator with 10 million subscribers can expect gross additions of approximately 500,000 subscribers and net additions of 250,000 subscribers per quarter. In addition, approximately 20 percent of the base can be expected to acquire a new handset. Thus, the total number of handsets sold by the operator is 4 million units per year.

Thus, if we assume that 500,000 Fastap handsets are sold in year one, this is equivalent to 12.5 percent of the eligible base. Assuming an additional 750,000 Fastap handsets are sold in year two, this represents 18.75 percent of the available units. And if sales rise to 1 million units in year three, this represents 25 percent of the total handset sales by the operator.

These adoption rates were selected to be conservative estimates as measured by the feedback from the participants in this study.

Increased ARPU through EXISTING Service by EXISTING users

Voice traffic continues to rise but the revenue from voice is declining. Increasing data and content use is therefore of critical importance to operators around the world – these services must not only replace reductions in voice revenues but also provide growth.

The focus groups gave strong evidence that use of existing services would increase with a Fastap-equipped handset. *iGillott*Research estimates that of the total average ARPU of US\$53.80, approximately 12 percent comes from data services, applications and content.

Under the assumptions provided by current hardware offerings, iGillottResearch expects this figure to rise to more than 30 percent of total ARPU by 2008 (source: 052004-01 Worldwide Wireless & Mobile Market Forecast, May 2004). Given the focus group findings, it is anticipated that the presence of devices with Fastap keypads can accelerate this adoption rate. By increasing the rate of adoption, percentage, or both, the effect of Fastap on data and content use could be significant. Using the case study of the operator with 10 million subscribers as an example:

- If a subscriber pays for SMS on a per message basis, then one additional sent message per day would increase their monthly ARPU by US\$3.00, assuming a US\$0.10/message rate. Given the industry average monthly ARPU of US\$53.80 (for the North American market, according to iGillottResearch forecast and analysis), this represents an ARPU increase of 5.6 percent. In year one, this would equate to an additional US\$4.5 million in revenue. For year two, the additional revenue would be US\$11.25 million and then US\$20.25 million in the third year. The total revenue over the three years is therefore US\$36 million, just from one single SMS per day from a small subset of the subscriber base.
- Another aspect of the analysis is that many operators offer packages of SMS, for example, 100 messages sent/received for US\$2.99 per month or 750 messages sent/received for US\$9.99/month. Assuming a subscriber is using the US\$2.99 package but upgrades because their usage with Fastap exceeds their allotment, this represents additional revenue of US\$7 per month, or an uplift in overall ARPU of 13 percent. Assuming that 20% of the existing data users that adopt Fastap also upgrade to the more expensive data package, this would equate to an additional US\$2.1 million in revenue the first year, \$5.25 million in year two and US\$6.45 million in year three, bringing the total SMS package increase to over US\$13.8 over three years.
- Assuming a per MMS price of US\$0.25/message, just one additional picture with text message every other week would increase ARPU by US\$0.50 per month or almost 1 percent. Note that many participants thought it would be easier – *and they would be more motivated* – to create and send a picture message with Fastap. Again using the example of a subscriber base of 10 million with the nominal increases mentioned, in year one, this additional MMS traffic would equate to an additional US\$5.6 million in revenue. For year two, the additional revenue would be US\$14 million and then US\$25.2 million in the third year. The total messaging revenue over the three years is therefore US\$44.8 million for existing users.

Increased ARPU through Adoption of NEW data services by EXISTING data users

The participants were very clear about their belief that all of the applications on the handset would be easier to use with Fastap. This includes not only SMS and MMS, but also the phone book, calendar, and Web access, games, IM and email. The revenue increase associated with these services is hard to calculate, especially because many applications, such as the calendar and games, are predicted to use airtime with increasing frequency.

As a conservative estimate, it seems reasonable to assume that the increase of all these services and applications combined will be approximately equal to the increase in SMS use alone, i.e. the equivalent of one SMS per day, yielding an additional US\$4.5 million in revenue in year one. For year two, the additional revenue would be US\$11.25 million and then US\$20.25 million in the third year. The total revenue over the three years is therefore an additional US\$36 million.

Increased ARPU through NEW data users

Because the response from the two groups was quite similar, we will use similar adoption rate assumptions: approximately 1/10th of the actual feedback received from the study. Assuming an average of US\$5 per month for these new data users, this generic carrier should expect to see an additional US\$22.5 million in year one, US\$56.25 million in year two and US\$101.25 million in year three, for a total of US\$180 Million over three years.

As large as these numbers are, they still seem quite conservative in that they assume an adoption rate of 20% after three years while the respondents indicate an adoption rate of 95% with the next phone purchase.

Opportunity for reduced handset subsidy/Customer Acquisition

The average cost of acquisition for a new subscriber in the U.S. wireless industry is US\$395 (according to *iGillott*Research analysis and research), including the handset subsidy, market cost, activation and sales channel costs. Some operators pay over US\$450 for each new subscriber. With an average monthly revenue of US\$53.80, it takes the average operator 7.3 months to recoup the cost of acquiring a new customer (note that this is based on average monthly revenue, not gross profit).

While participants indicated acceptance of a US\$38 premium for a phone with a Fastap keypad, feature premium results are always high in market studies. Assuming the actual premium consumers are willing to pay will be one half the number reported in the study suggests that Fastap phones could sell at a premium of US\$19 dollars.

While this shows an opportunity for reduction of the handset subsidy and/or customer acquisition cost, this study will not include these factors in its overall economic analysis because:

- 1) The economics of handset pricing varies too widely from carrier to carrier and even plan to plan within a carrier.
- 2) OEMs may charge a few dollars more for phones with this technology.

Therefore, while some carriers may use the technology to reduce the handset subsidy and acquisition cost this study will avoid the extreme variations between carrier and OEM pricing strategies by simply noting that customer willingness to pay a significant premium for the Fastap technology is an indication of strong interest and acceptance of the keypad design.

Conclusion

For users with text messaging baseline experience at or near zero, it can take a few minutes to familiarize oneself with the Fastap technology. It is reasonable to assume that consumers understanding in the real world will have a higher degree of exposure through advertising, personal observation &/or word of mouth. Hence, users in the real world should acclimate to the Fastap technology in less time. The participants in the study suggest it is not unreasonable to expect that Fastap technology could largely replace the 12 button keypad in the mobile environment over the course of time.

From the mobile industry's standpoint, this research suggests that improved data entry methods such as the Fastap keypad – and movement away from the current “3 tap” methods in particular – would have a profound impact on their business by increasing data usage among the vast majority of consumers who think of their phones as voice devices first and as a data device second. .

The purchase decision is made on well-known factors of cost, size, weight, appearance, brand, and certainly the intended use of the device by the consumer. Fastap seems to provide a unique offering in that it is a voice-first phone that appeals to voice-first users while also providing improved ease of use for data applications. It is *iGillott*Research's estimate that under the nominal adoption rates assumed here (two years to reach approximately 1/10th the rate predicted by the study's raw data) the generic 10 million subscriber operator in the example should expect to see additional data revenue of US\$39.2 million in year one (an uplift of 5 percent), US\$98 million in year two (12.5 percent increase) and US\$173.4 million in year three (22.2 percent increase) for a total of US\$310.6 million over three years, equivalent to an **increase of 1.6 percent in total service revenue**.

Finally, it is noteworthy that all financial estimates are considered to be conservative in comparison to the reactions and opinions voiced by the focus groups. When compared to the adoption rate of a number of other device enhancements which deliver considerably less value through the supply chain – e.g., camera phones – it is easy to speculate that Fastap or similar text/data entry interfaces will have at least a similar adoption curve.