

“FunMail - An Innovative New Way to Drive Mobile Messaging Revenues”



A Frost & Sullivan White Paper

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Executive Summary	2
Objectives	2
Key Findings	2
Growth of SMS	2
Lower MMS Adoption	2
Decreasing Voice ARPU (and Importance of Mobile Data)	2
FunMail – Unlocking New Mobile Data Revenues	3
Conclusions	3
U.S. Mobile Messaging Markets	3
Market Dynamics: Problems and Disappointments for Mobile Operators	3
Increasing SMS Volumes	3
MMS Adoption: A Promise Unfulfilled	4
Mobile Messaging and Growth of Mobile Data Services	5
Overview and Outlook for Mobile Data Services	5
Mobile Messaging and Mobile Data Revenues: Increasing Volumes without Corresponding Revenues	6
Contribution of Mobile Messaging to Mobile Data Revenues	6
Introduction to FunMail – Providing Operators with New Premium Visual Messaging Services	10
FunMail Overview	10
FunMail Consumer Experience	10
FunMail Delivery Network - MMS, Facebook and Twitter	11
FunMail’s Media Brain	12
User Generated FunMail Content	13
FunMail – Key Benefits	13
FunMail vs. Standard MMS – Key differences	15
Case Study – Impact of FunMail	15
Background and Assumptions	15
Case Study Analysis	16
Conclusions	17

EXECUTIVE SUMMARY

Objectives

The focus of this white paper is to evaluate the ability of FunMobility's FunMail messaging platform to help mobile operators enhance growth and profitability through mobile data revenues. The paper examines the current state of the U.S. mobile data services market and presents an analysis of the impact of existing mobile messaging services on mobile data revenues. Frost & Sullivan also analyzes how mobile operators (and device vendors) can leverage the FunMail solution to drive additional revenues from mobile messaging services.

Key Findings

The key findings of this whitepaper are as follows:

Growth of SMS

SMS volume is increasing exponentially in the U.S. mobile communications market. However, messaging continues to provide diminishing returns on a per-message basis due to the popularity of messaging-related mobile data plans (particularly among the heavy users of mobile messaging such as the teen segment). Frost & Sullivan believes that more than 85 % of total SMS volume in the U.S. mobile communications market is currently generated by mobile subscribers that use a messaging-related mobile data plan. Mobile operators will continue to see more SMS traffic under existing fixed revenue per month messaging plans - and the revenue-per-message will continue to decline.

Lower MMS Adoption

MMS adoption – especially when compared with SMS – has been significantly lower in the U.S. mobile communications market. MMS is largely limited to a 'photo sharing' type of experience and MMS in the form of picture messaging tends to be extremely rigid in terms of letting the mobile subscribers edit or customize images. Generally speaking, consumers' choice of content is limited to what is on their phone or has been sent to them by others. Additionally, creating a MMS on a camera phone requires a visual subject to be photographed to appropriately represent the communication. This is not a very smooth experience for the subscribers.

Decreasing Voice ARPU (and Importance of Mobile Data)

As the U.S. mobile market matures (with subscriber penetration approaching 90%) and voice revenues continue to decline, mobile data revenues have become critical for mobile operators to maintain ARPU levels. Mobile operators clearly need to continue to explore mobile data opportunities to increase revenues from their existing subscriber base – particularly opportunities related to messaging. However, the existing SMS and MMS service

offerings have limited ability to generate premium mobile data revenues for the mobile operators. Adoption of messaging-related mobile data plans has taken the upside out of mobile operator revenues (and profits), while MMS adoption remains low to generate any significant premium mobile data revenues.

FunMail – Unlocking New Mobile Data Revenues

FunMail enables mobile subscribers to communicate visually through a wide range of emotional, fun and enjoyable images that are automatically matched to their text messages. With FunMail, mobile operators can convert simple, existing SMS usage behaviors towards an advanced, premium messaging product without requiring any changes to the user behavior – FunMail is like using SMS while delivering an MMS experience. This allows mobile operators to build on the popularity of mobile messaging to enable their customers to communicate in a fun and a unique way and execute on their ‘self-expression’ requirements.

Conclusions

Frost & Sullivan concludes that FunMail can unlock new opportunities for the mobile operators and has the potential to be a significant driver of mobile data revenues. With FunMail, mobile operators can address the existing challenges to generating premium SMS and MMS revenues and build on the popularity of mobile messaging to enable their customers to communicate in a fun and a unique way. Overall, the FunMail service is transparent, automatic, intelligent yet extremely easy to use and delivers enough value to be sold outside of a text messaging plan which will help the mobile operators generate premium mobile data revenues.

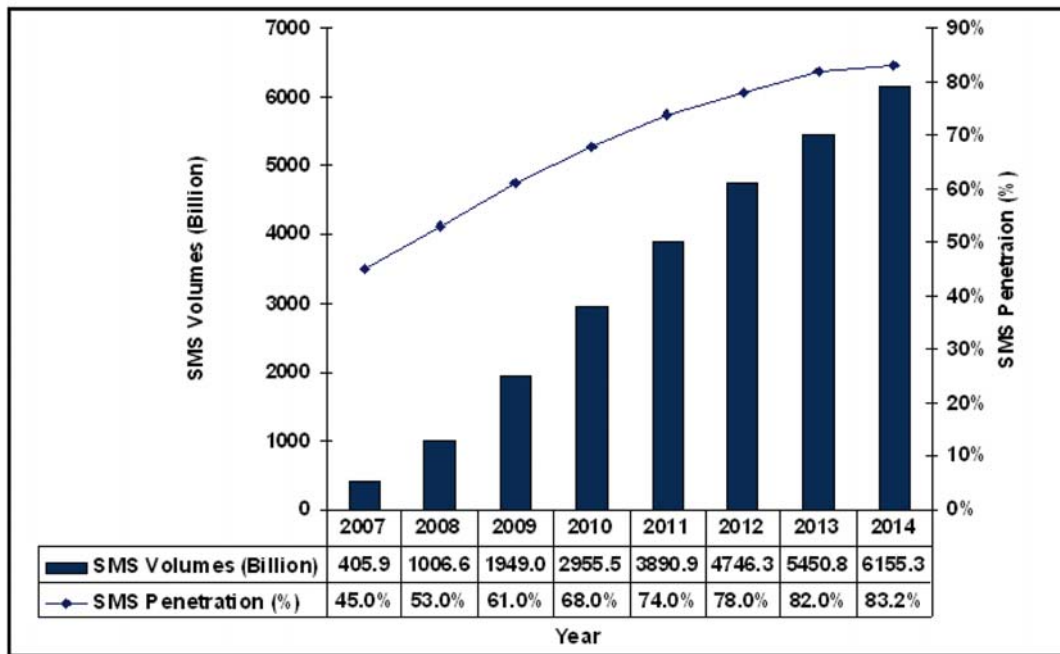
U.S. MOBILE MESSAGING MARKETS

Market Dynamics: Problems and Disappointments for Mobile Operators

Increasing SMS Volumes

The good news is that SMS volume continues to increase exponentially in the U.S. mobile communications market. With SMS penetration still at the 60% mark, there is significant room for growth in mobile messaging. Frost & Sullivan expects the SMS penetration in the U.S. mobile communications market to increase from 61% in 2009 to more than 80% by 2014, with total SMS volume increasing from approximately 2 trillion in 2009 to more than 6 trillion in 2014.

Figure 1 shows the SMS penetration and volume in the U.S. mobile communications market for the time period 2007-2014.



Source: Frost & Sullivan

MMS Adoption: A Promise Unfulfilled

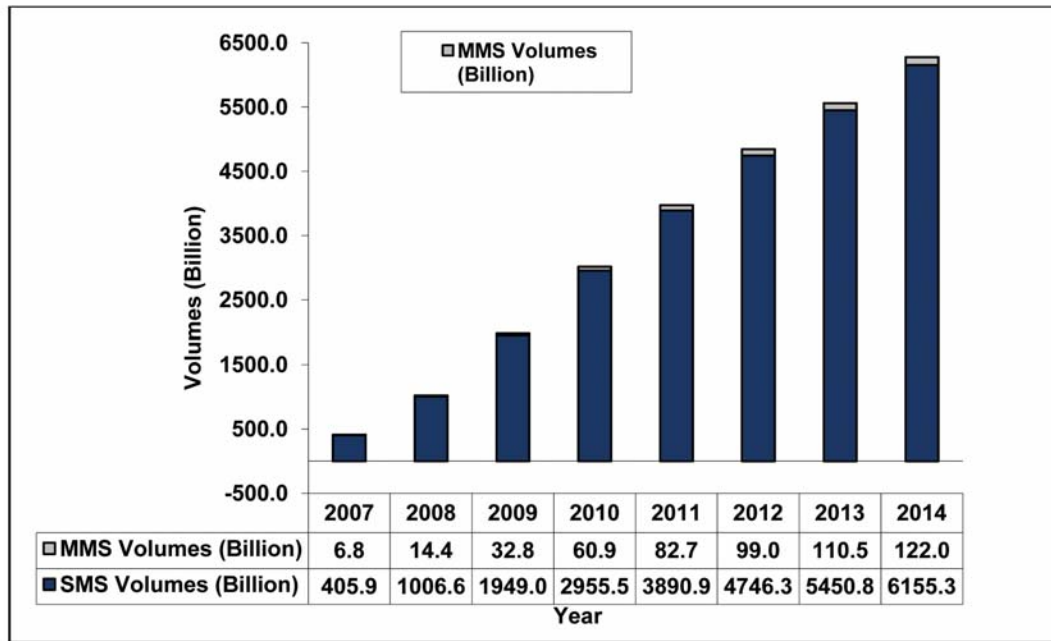
MMS adoption – especially when compared with SMS – has been significantly lower in the U.S. mobile communications market. Although cameras are becoming very common in wireless handsets, sending images on mobile phones has not developed at anywhere near the rate that SMS was adopted. This is due to a number of problems inherent to MMS that are significant barriers to consumer adoption.

While the SMS channel can be used for a wide range of basic communication, information and entertainment requirements, MMS is largely limited to a ‘photo sharing’ type of experience. Additionally, MMS in the form of picture messaging tends to be extremely rigid in terms of letting the mobile subscribers edit or customize images to communicate with others. Generally speaking consumers’ choice of content is limited to what is on their phone or has been sent to them by others. This inherent lack of flexibility is a major reason for the lower adoption of MMS as an effective communication channel.

In addition, the user experience in MMS has been implemented in a number of different ways resulting in varied user experiences often resulting in users feeling the MMS experience is more difficult than SMS which was adopted in a universal manner. Mobile operators have had to invest in expensive network components such as the MMSC and train their customer support staff to handle various MMS-related issues; however, lower MMS adoption has not really helped them justify these investments.

The upshot is that only 1 in every 70 mobile messages is an MMS – depriving carriers of an important potential revenue source.

Figure 2 shows the MMS and SMS volume in the U.S. mobile communications market for the time period 2007-2014.



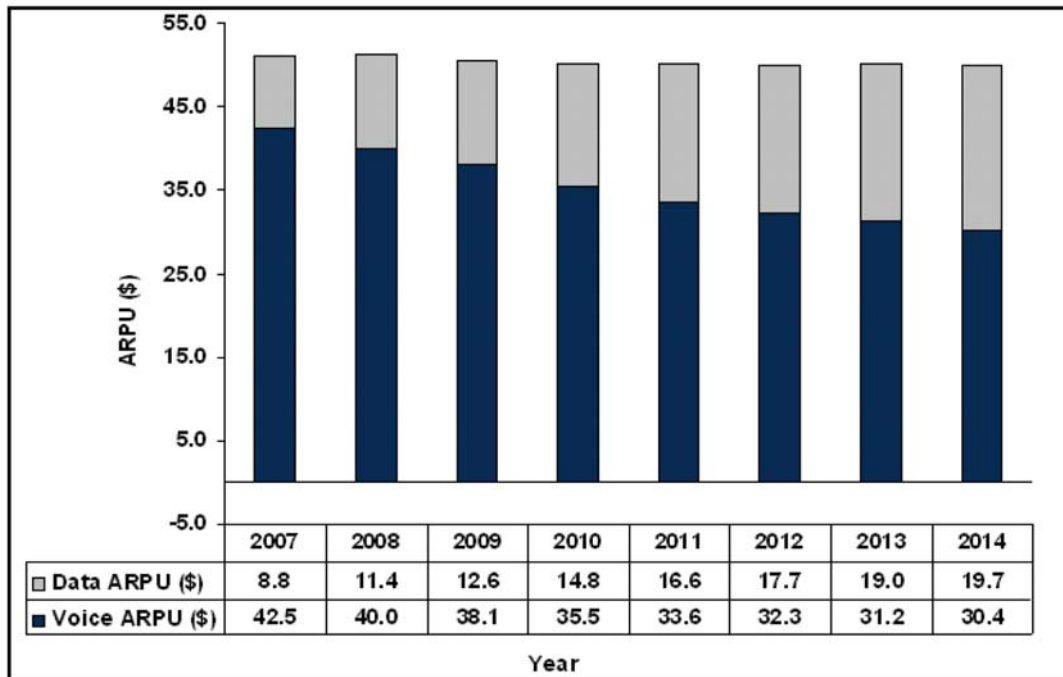
Source: Frost & Sullivan

MOBILE MESSAGING AND GROWTH OF MOBILE DATA SERVICES

Overview and Outlook for Mobile Data Services

Mobile data services currently contribute more than 25% to the service revenues of the U.S. mobile operators. This figure is expected to surpass the 30% mark shortly. The growth of mobile data revenues has helped the mobile operators sustain – if not increase – the average revenue per user (ARPU). As the US mobile market matures (with subscriber penetration approaching 90%) and voice revenues continue to decline, mobile data revenues have become critical for mobile operators to maintain ARPU levels. In this environment, mobile operators clearly need to continue to explore mobile data opportunities to increase revenues from their existing subscriber base – particularly opportunities related to messaging.

Figure 3 shows the voice and data ARPU for the U.S. mobile communications market for the time period 2007-2014.



Source: Frost & Sullivan

Figure 3 demonstrates that voice ARPU is falling and mobile operators will be dependent on mobile data revenues to sustain the ARPU levels. Frost & Sullivan expects ARPU to remain flat during the forecast period, with data revenues contributing nearly 40% to the total service revenues by 2014.

Mobile Messaging and Mobile Data Revenues: Increasing Volumes without Corresponding Revenues

Frost & Sullivan’s analysis shows that the rapid growth of mobile messaging may not translate into a proportionate growth of mobile data revenues. Referring to figures 1, 2 and 3, SMS volume is expected to grow by more than 200% between 2009 and 2014, while the growth of mobile data ARPU will be less than 60%. In absolute terms, mobile data revenues are expected to grow from \$35.3 billion in 2009 to approximately \$62.0 billion in 2014, while SMS volume is expected to triple over the same forecast period.

Contribution of Mobile Messaging to Mobile Data Revenues

Frost & Sullivan defines messaging- related mobile data plans as those service plans that allow mobile subscribers to send or receive a certain amount of SMS at a fixed price per month. These could be messaging-only mobile data plans (for example, \$5.99 per month for 200 SMS) or bundled mobile data plans (such as \$29.99 per month for unlimited mobile Internet and SMS).

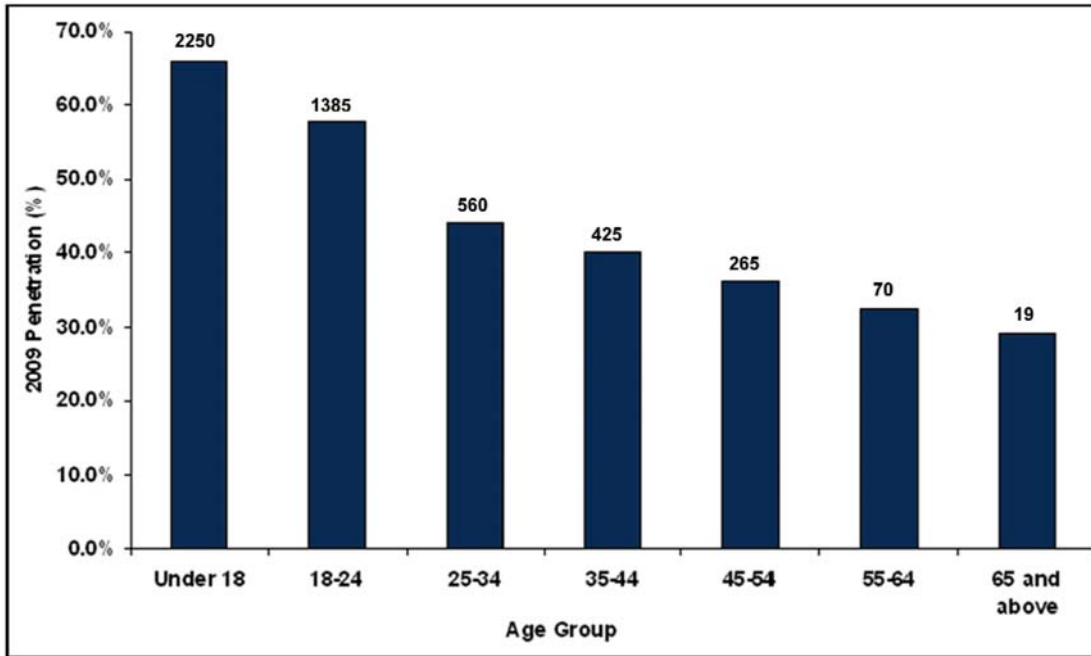
The large majority of the mobile messaging volume in the U.S. mobile communications market is generated by subscribers that are on a messaging-related mobile data plan. Penetration of unlimited mobile messaging plans (or bundled mobile data plans that include mobile messaging) is the highest in the youth market (under -18 and the 18-24 year old user segments), which generates the highest messaging volumes. Teenagers are known to contribute upwards of 10,000 messages per month and SMS has evolved as the preferred communication channel for this segment. **Nearly a 100% of such high volume subscribers are on a messaging – related mobile data plan.** Frost & Sullivan believes that more than 85% of total SMS volume is currently generated by mobile subscribers on some form of messaging-related mobile data plan, and in 2014, less than 6% of messaging volume will be generated outside of messaging-related mobile data plans.

Figure 4 shows the variations in SMS volume generated by subscribers on a messaging-related mobile data plan vs. subscribers not on a messaging-related mobile data plan in the U.S. mobile communications market for the time period 2007 - 2014.



Source: Frost & Sullivan

Figure 5 shows the monthly SMS volume and penetration of messaging-related mobile data plans by age-group in the U.S. mobile communications market in 2009.



The penetration of messaging-related mobile data plans is the highest in the under 18 and the 18-24 year old segment which indicates that high volume texters rely on messaging-related mobile data plans to keep their mobile data usage costs under control. *Source: Frost & Sullivan*

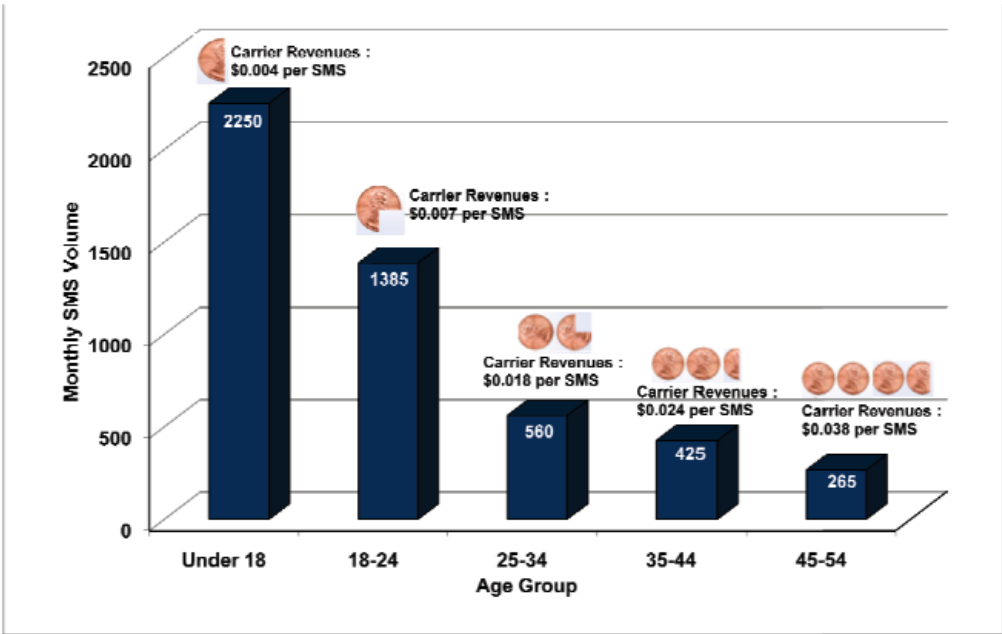
Implications for the Mobile Operators

The implications of adoption of messaging-related mobile data plans and the limited growth of MMS are twofold:

1. First, the trend in adoption of messaging-related mobile data plans will likely **depress the profitability of messaging for mobile operators**. Mobile operators see more SMS traffic under existing fixed revenue per month messaging plans - and the revenue per message will continue to decline. Unlimited SMS plans are available for less than \$20 per month (and for even less when purchased as part of a bundled mobile data plan) in the U.S. mobile communications market, which means that the high-volume mobile subscribers generating thousands of messages per month are **paying less than \$0.01 per message sent or received**.
2. Second, MMS has not evolved into the pervasive multimedia communication tool as originally envisioned by the mobile operators. Difficulties from technical and use-case perspectives continue to hamper growth. MMS was once thought to become a

natural evolution for operators. MMS was thought to simply replace SMS at some point with users paying substantially higher fees for MMS that would drive an increase in ARPU. But, now that MMS is – and is likely to remain for many years – a niche service, operators have to seek other ways in which to provide enhanced services to users.

Figure 6 shows the monthly SMS volume and the associated revenue per SMS by age-group in the U.S. mobile communications market in 2009.



* Assuming 1) all messaging is done as part of a messaging-related mobile data plan; and 2) the mobile operator allocates \$9.99 per month for unlimited SMS out of a \$29.99 per month mobile data plan for unlimited mobile Internet and SMS.

Source: Frost & Sullivan

It is important to note that the under-18 and the 18-24 year old segments together contribute nearly 67% of total SMS volume in the U.S. mobile communications market. Yet, as Figure 6 shows, mobile operators are earning less than \$0.01 per message from these subscribers. They need to consider deploying innovative mobile messaging services to help increase the lifetime value of a mobile messaging customer by generating premium messaging revenues; and by ensuring subscriber stickiness. The youth segment – the prime driver of mobile messaging volume – will continue to be highly interested in mobile messaging services and this segment should be the focus of any such revenue-augmentation initiative. There is a clear need for mobile data solutions that have the ability to generate additional revenues from mobile messaging without requiring the mobile subscribers to change their service usage behaviors. Any such implementation has to deliver enough value to the mobile subscribers to be priced over and above the messaging-related mobile data plans.

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INTRODUCTION TO FUNMAIL – PROVIDING OPERATORS WITH NEW PREMIUM VISUAL MESSAGING SERVICES

FunMail Overview

FunMail is a premium messaging service for operators offered by FunMobility. FunMail enables users to send traditional SMS text messages to others that result in the recipient being able to see an image rather than just text message. This allows the user of FunMail to visualize a wide range of emotional, fun and enjoyable images. In addition, subscribers can use their FunMail service to send messages to a number of web sites such as Twitter (via SMS tweets), social networking posts (Facebook, MySpace, etc.) and others.

Using FunMail, mobile subscribers can communicate in a new way by converting their text messages into multimedia constructs. A component of the FunMail system called the “Media Brain” interprets the subscriber’s text messages and automatically gives the sender a choice of relevant, compelling images that are sent to the recipient as ‘FunMails’ or are sent to various web sites. It can therefore be used for every circumstance and case in which the subscriber would normally send a plain text message.

The FunMail client enables the subscriber to compose a traditional text message and enhance the message with a visual element which is then sent to the recipient or the appropriate web site. The user’s handset can see the enhanced visual message via either the FunMail client (if they have it installed), via MMS (if available), or if MMS is not present, via a link through which the image can be seen using the handset’s browser.

The FunMail service provides wireless operators with a premium service that increases the revenue they can realize out of traditional SMS text messaging thus increasing the revenue per SMS text message.

FunMail is targeted at the youth segment that appreciates the value of a premium messaging service that provides more than basic text messaging. It’s already been demonstrated that the youth segment is willing to pay for an enhanced messaging service like FunMail.

FunMail Consumer Experience

When used in the mobile environment, FunMail enables “visual text messaging”. It allows mobile subscribers to combine their text messages with different images. Mobile subscribers simply open the FunMail client on their handset, type the message and are then presented with multiple images by the intelligent FunMail client (based on the text they have typed) that can be potentially combined with the text message. They can then choose



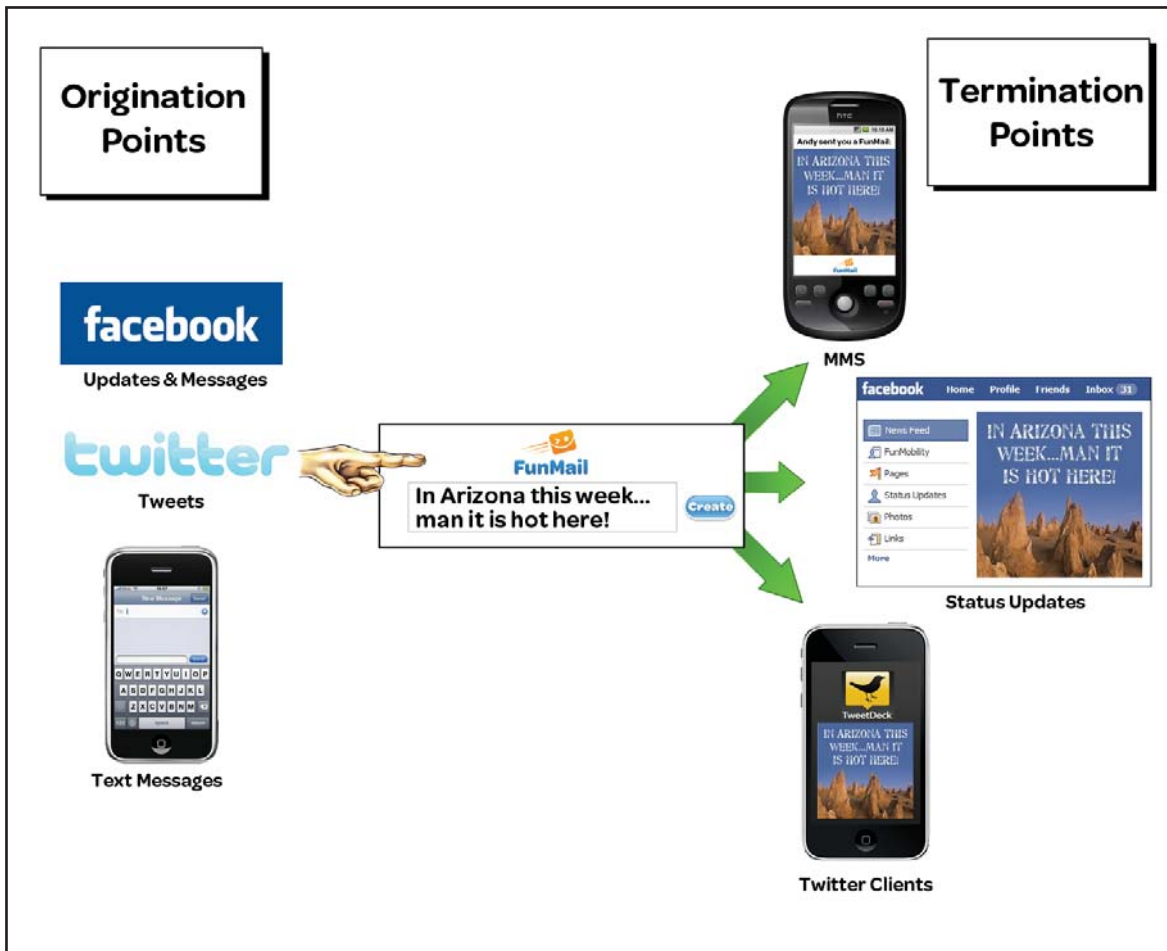
the image from the options available. The sender then previews the FunMail, sends it, and the recipient receives the combined message exactly as shown in the preview to the sender, using either the FunMail client (if installed) or via MMS. FunMails can also be sent to popular social networks such as Facebook or Twitter as messages or status updates.

Figure 7 shows how FunMail allows mobile subscribers to add images to their text messages.



FunMail Delivery Network – MMS, Facebook and Twitter

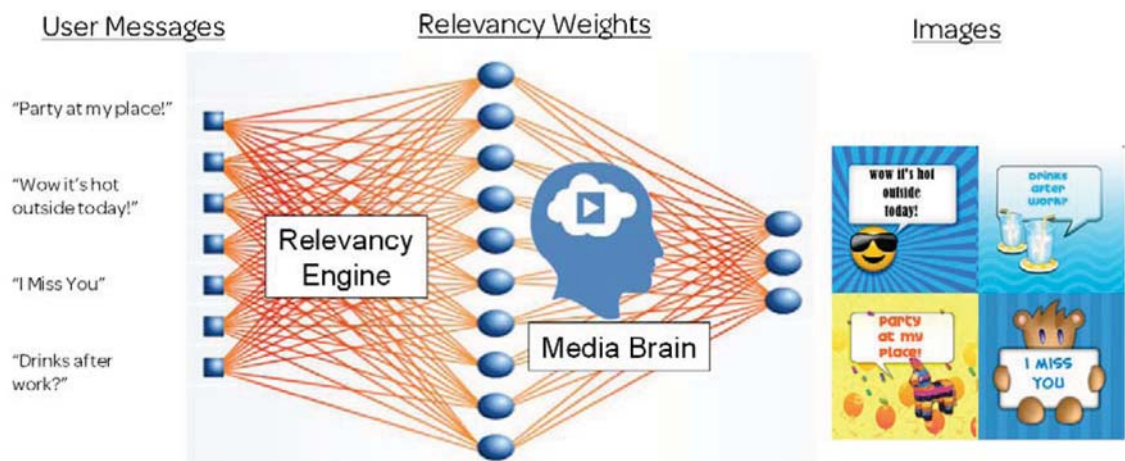
The FunMail platform leverages FunMobility’s delivery network, built up from years in the mobile content business. Additionally, FunMobility has added the capability for FunMails to be terminated in social networks such as Facebook as status updates, “visual wall comments” or private visual messages. Additionally, the FunMail platform supports “FunTweets” – turning a tweet visual – as well as “Fun ReTweets” – taking someone else’s Tweet and creating a visual.



FunMail's Media Brain

The FunMail platform is designed as a learning platform that consistently improves its capacity to understand a typical text message and offer up more appropriate visual content additions over time. The system uses tagging and weights to associate all content with typical text messaging “concepts” including common phrases, things, places, events, activities and emotions. Each FunMail sent acts as a “vote”, strengthening the relationship between the trigger phrase and the content, both globally and for each individual user. In this way, new content can flow into the system and user behavior will have increasingly sophisticated relationships between text messaging analysis and content. Thus, FunMail can build a psychographic profile of the user (based on their association of text with images) as well as of different communities and user segments. At launch, FunMail will support content from Corbis, Getty, Flickr Creative Commons, National Geographic as well as FunMobility’s own catalog. It is estimated that FunMail’s extensive database of images will have over 100,000 pieces of content mapping to over 20,000 distinct messaging terms. Additionally, the FunMail Media Brain uses Google Translate to support over 50 worldwide languages.

Figure 8 shows how the FunMail Media Brain builds the association between texts and images for mobile subscribers.



FunMail is developed by FunMobility, America's largest mobile content community.

Source: FunMobility, Frost & Sullivan

User Generated FunMail Content

The FunMail "Media Brain" can ingest content from a variety of sources, including user-submitted photographs from Creative Commons, Flickr or Photo Bucket. User-created FunMails can be public (moderated by FunMobility) or private, and users can setup their own personal tags which trigger cloud-based photographic FunMails. This serves to both create a deeply personalized messaging experience that can conveniently be reproduced by using specific phrases or tags in messages. Additionally, these public FunMails can enhance the visual lexicon, gaining relevancy weighting if they prove to be popular among other FunMail users.

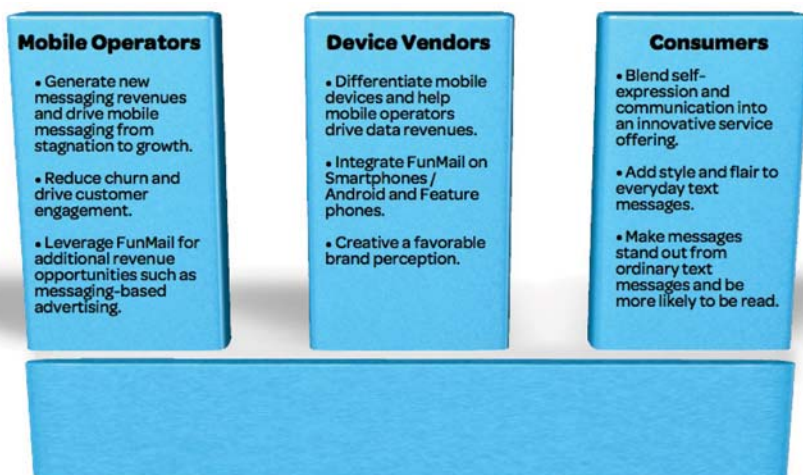


FunMail – Key Benefits

Frost & Sullivan believes that FunMail can help mobile operators increase mobile data revenues by offering subscribers a premium service on top of their existing SMS service. The FunMail service has the right ingredients to see good uptake in the youth segment – it is easy to use, allows the young adults to execute on their 'self-expression' needs, and can run on mass-market devices. The youth segment forms the core of the mobile operators' subscriber base and FunMail can also help mobile operators in controlling churn in this segment. With FunMail, mobile operators can convert simple, existing SMS usage behaviors to an advanced, premium product without requiring any changes to the user behavior.

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Original Equipment Manufacturers (OEM) can leverage FunMail to differentiate their mobile devices through a value-added service that is central to the mobile operators' data revenue maximization efforts. This can also help create a favorable perception of a particular brand of devices and can help generate additional business from service providers. This is particularly important for Android devices, enabling OEMs to differentiate their devices from competitors who are all running the same operating system. Additionally, older devices can be potentially be given new life through the addition of FunMail functionality. As of this writing, FunMobility is integrating FunMail functionality into various messaging "stacks" provided by companies who provide OEM messaging clients. FunMobility plans to offer FunMail on white-label basis to these companies.



Source: Frost & Sullivan

Figure 9 summarizes the benefits of FunMail for the key mobile messaging value chain participants.

It is important to note that the core FunMail technology can be extended to other photo-related mobile data services as well. For example, the platform can leverage certain in-built facial-recognition technologies that can understand the facial expressions and then adapt photos to resemble a user's expression. This can help mobile operators participate in the user-generated ecosystem in an innovative manner, and deliver a comprehensive experience across the online and the mobile channels.

FunMail can also be used for mobile marketing and advertising services. For example, a brand could invite mobile subscribers to send them FunMails in a contest type of scenario. The FunMail service also lends itself extremely well to the mobile operators' customer-relationship management (CRM) initiatives and outreach programs. To illustrate further, the FunMail rendering technology can be integrated into an existing data feed and used to

wish subscribers on their birthdays by tying into the birthday database, etc.

FunMail vs. Standard MMS – Key differences

FunMail delivers a superior experience vs. existing MMS services. As mentioned, MMS is unable to meet the existing communication (and self-expression) requirements of mobile subscribers due to the inherent rigidity in content creation. In a majority of cases, MMS creation requires a camera phone which limits its usage to devices with such a feature. It also requires a visual subject to be photographed that appropriately represents the communication. On the other hand, the intelligent FunMail client lets mobile subscribers decide exactly how they want to create a multimedia message and how the experience for the intended recipient should be.



Subscribers can choose images from the existing FunMail content libraries or import their own images which can then be combined with text to create a FunMail. There is no requirement of a camera phone. This also means that FunMail can be used in situations where camera phones may not be suitable to use. Mobile operators do not have to invest in any handset or network upgrades to drive multimedia messaging via FunMail which ensures a quicker return on investment.



FunMail can support multiple 'text-in-visual-out' scenarios across the mobile and the online networks. Support for a large number of origination and termination points (in mobile and online networks) delivers flexibility, drives traffic and can generate additional data revenues. Users want to communicate in social networks via messaging, but most of the time they have language to do it in but don't have the appropriate media to add to

their message. FunMail is the answer to all such enhanced communication requirements of the 'socially' connected' users.

CASE STUDY – IMPACT OF FUNMAIL

Background and Assumptions

Frost & Sullivan has developed a case study to analyze the impact of FunMail on a mobile operator's data revenues in seven years. Some assumptions made when developing this case study are as follows:

- 10 million subscribers in Year 1, increasing at a rate of 10% every year till Year 8
- Mobile messaging (SMS) penetration at 50%, increasing at 7% every year till Year 8
- Mobile ARPU is constant at \$50 for all the years
- Data contribution to the ARPU increases from 20% in Year 1 to 34% in Year 8 at a rate of 2 percentage points per year

Additional assumptions for analyzing the impact of FunMail are as follows:

- FunMail Implementation effective start of the Year 1.
- FunMail service priced at \$2.99 per month per subscriber for unlimited FunMails.
- FunMail service penetration in the mobile messaging base to equal 7 % at the end of year 1, and increase at a rate of 15% annually.

Case Study Analysis

Figure 10 captures the dynamics of mobile data services for the mobile operator without a FunMail implementation for Year 1 through Year 8.

Year	Mobile Subscribers (Million)	ARPU (\$)	Data ARPU (%)	Data ARPU (\$)	Messaging Penetration (%)	Messaging Subscribers (Million)	Data Revenues (\$ Million)
Year 1	10.00	50.00	20.00%	10.00	50.00%	5.00	1,145.45
Year 2	11.00	50.00	22.00%	11.00	53.50%	5.89	1,386.00
Year 3	12.10	50.00	24.00%	12.00	57.25%	6.93	1,663.20
Year 4	13.31	50.00	26.00%	13.00	61.25%	8.15	1,981.98
Year 5	14.64	50.00	28.00%	14.00	65.54%	9.60	2,347.88
Year 6	16.11	50.00	30.00%	15.00	70.13%	11.29	2,767.15
Year 7	17.72	50.00	32.00%	16.00	75.04%	13.29	3,246.79
Year 8	19.49	50.00	34.00%	17.00	80.29%	15.65	3,794.68

Source: FunMobility, Frost & Sullivan

Figure 11 captures the dynamics of mobile data services for the mobile operator with a FunMail implementation for Year 1 through Year 8.

Year	Mobile Subscribers (Million)	ARPU (\$)	Data ARPU (%)	Data ARPU (\$)	Messaging Penetration (%)	Messaging Subscribers (Million)	Data Revenues (\$ Million)
Year 1	10.00	50.00	20.00%	10.00	50.00%	5.00	1,145.45
Year 2	11.00	50.00	22.00%	11.00	53.50%	5.89	1,386.00
Year 3	12.10	50.00	24.00%	12.00	57.25%	6.93	1,663.20
Year 4	13.31	50.00	26.00%	13.00	61.25%	8.15	1,981.98
Year 5	14.64	50.00	28.00%	14.00	65.54%	9.60	2,347.88
Year 6	16.11	50.00	30.00%	15.00	70.13%	11.29	2,767.15
Year 7	17.72	50.00	32.00%	16.00	75.04%	13.29	3,246.79
Year 8	19.49	50.00	34.00%	17.00	80.29%	15.65	3,794.68

Source: FunMobility, Frost & Sullivan

As depicted in Figure 10 and Figure 11, FunMail can generate an uplift of more than 2.5% (or \$97.71 million annually) in the total mobile data business for a mobile operator within 8 years of deployment. FunMail is a premium-priced service which can tangibly advance service-penetration and reduce churn for mobile operators that proactively market the service to their core messaging customer base (the youth segment).

CONCLUSIONS TO THE WHITEPAPER

Mobile operator revenue is migrating to fixed revenue per user per month which includes unlimited text (SMS) messaging. As users increase the number of messages each month, the revenue per message is falling. With FunMail, mobile operators have the opportunity to offset this and generate premium mobile messaging revenues by offering a next-generation messaging-based mobile communications service that delivers enough value to be sold outside of a text messaging plan. The service is extremely compelling to the core mobile messaging user base (the youth segment) and does not require any change in the basic messaging consumption habits of mobile subscribers. It is transparent, automatic, intelligent yet extremely easy to use.



Mobile operators can also use the FunMail platform for additional services such as CRM and mobile marketing. Device vendors can leverage FunMail to differentiate their wares and help mobile operators overcome the challenges in the mobile messaging.

Frost & Sullivan concludes that FunMail can help mobile operators build on the popularity of mobile messaging to enable their customers to communicate in a fun and a unique way. The service can generate 'stickiness', reduce churn, and advance the adoption of mobile social networking. SMS is a simple service that does not allow the mobile subscribers to really express context or tone beyond simple emoticons. On the other hand, MMS is too complex, rigid, and limited to a few use cases. FunMail delivers an enhanced multimedia experience and successfully addresses the key challenges of the existing SMS and MMS services. By deploying FunMail, mobile operators can attain a competitive edge and successfully execute on their long-term growth strategy of driving mobile data revenues.

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