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This is an invitation to participate in a new texting model based on the free software ideology. Wireless texting/messaging has become an indispensable medium for day-to-day communications. It is also a gigantic business in dollar terms. The consequences of the new Libre model are therefore enormous in both societal and business terms. In this email we identify the main topics, provide pointers to the complete details, and present an explicit execution strategy.

## Introduction

The mobile messaging industry of today is a closed, proprietary construct. Existing wireless texting/messaging implementations (telephony SMS, and mobile email solutions such as BlackBerry) are walled-garden implementations, closely protected by patents, copyright and trade secrecy. The wireless phone companies and/or their business partners own and control every component of the messaging service, including the device, the protocols, the software and the network.

But all that is about to change. It is now possible to implement a completely open texting solution, without dependence on proprietary control of any asset. A number of industry developments make this possible:

- Public spectrum WiFi is now ubiquitous and has become the standard technology for final-leg device connectivity. In many locations WiFi is available for direct, single-leg connectivity between the mobile device and the open Internet. This coverage can be expected to spread, eventually resulting in near-universal WiFi Internet access.
- In situations or locations where direct WiFi Internet connectivity is not available, a number of wide-area networks now exist to provide second-to-last-leg, wide-area wireless connectivity.
- Mature and sophisticated Linux-based PDAs are now readily available for use as generic open mobile devices.
- Open, patent-free protocols exist for efficient wireless messaging.
- Device and server implementations of the protocols exist in the form of free software.
- The eventual transition to IPv6 will allow restoration of the true mobile Internet end-to-end model, delivering mobile messaging capability without any form of built-in dependence on the service provider.

These developments now allow implementation of what we will call a **Libre Texting** model—meaning a completely open mobile messaging model, without any proprietary components or dependencies.

And since this is technologically feasible, and since the business imperatives to do this are enormous, this has now become an industry inevitability.

But what is not inevitable is how the industry gets there. Our vision and purpose is to maintain the industry on track towards a truly Libre model, without becoming derailed or corrupted along the way. It is the genuine Libre model that delivers the greatest benefits to the industry and society at large.

This email is a part of that purpose. In this email we describe the general requirements for a Libre Texting solution, and we show how these requirements are now fully satisfied. We then describe our own implementation, which we call **By* Libre Texting**. We will also describe the major transformational effects that Libre implementations can be expected to have on the wireless texting/messaging industry, and the correspondingly large business opportunities.

But first, some background history.

## Background history

In 1995 AT&T Wireless Services began development of a wireless messaging system called *personal Air Communications Technology* (pACT). The spectrum for pACT was Narrowband PCS, and the lower layers of pACT were based on CDPD technology, the first nationwide native mobile IP network. The pACT messaging protocols were designed for efficient IP-based mobile messaging/texting. In effect, pACT was functionally equivalent to the popular mobile email solutions of today such as BlackBerry.

Neda Communications, and I personally, played a major role in the development of the pACT system. In particular, I was the primary architect of the mobile messaging component of pACT. Previous to this I had played an active role in the development of CDPD. I was a designer and an author of the original CDPD specifications, and am a co-author of *Internetwork Mobility: The CDPD Approach*, often cited as the authoritative text on this subject matter.

As an engineer, my personal engineering values, and my long-term view of the mobile messaging industry, dictated the creation of a proper engineering solution—one that would provide enduring value to the industry and society. Thus my purpose was to make pACT as open as possible, as a genuine industry enabler, and I took personal responsibility to maintain the messaging layer protocols truly open and end-to-end.

However this engineering purpose was in fundamental conflict with the business goals of AT&T, and their underlying fixation on maintaining the walled-garden business model.

AT&T spent about $500M on the development of pACT, including $160M for the purchase of nationwide Narrowband PCS licenses. But then in March 1997 AT&T abandoned the pACT wireless messaging project entirely, and elected not to maintain or further pursue any of the pACT technology.

But recognizing the tremendous significance and future necessity of this technology, Neda continued development of the pACT protocols independent of AT&T. We completed development of the protocols, and published them as RFC-2188 (1998) and RFC-2524 (1999). As the primary author of these RFCs I have made patent-free declarations for both of them through the Free Protocols Foundation. Thus these are now truly open protocols, fully capable of playing the industry enabling role originally intended for them.

As late as 2000 the significance of messaging was still not fully appreciated, and in that year a major industry bloc (including AT&T) aggressively promoted mobile web browsing, in the form of Wireless Application Protocol (WAP), as the primary wireless application.

But in our industry paper *The WAP Trap* (2000, also available in French) we took a very different view, arguing among other things that mobile messaging is the key entry-point wireless application. That argument is now over, and mobile messaging is clearly proven as the dominant value proposition for personal mobile devices.

In the following year, 2001, we wrote *Operation WhiteBerry*, describing an open mobile messaging implementation. In that paper we described how equivalent mobile messaging functionality to the existing closed systems could be implemented based on patent-free protocols, free software, and existing products and technologies. In effect, Operation WhiteBerry was an advanced version of the abandoned pACT model, presented back to the industry in the form of a truly open implementation.

But at that time the phone companies remained fully wedded to the closed and patented BlackBerry-style messaging model. There was no understanding or interest in the Libre model among the telephone companies, and they remained committed to the walled garden model.

In our 2001 paper we said this:

> *Sooner or later, the Mobile Messaging industry must and will adopt an open solution model.*

In 2001 there remained frictions and blockages to inhibit this open solution. But in the intervening years the industry has advanced in a number of critical respects, and the blockages are now gone.

## Libre Texting: the concept

The time is now right to *liberate texting*. By this we mean shift the texting medium from the proprietary ownership model of today to a Libre model, where every component of the texting service is implemented in an open form, with no closed or proprietary dependencies. This includes the device, the protocols, the software, and access to the wireless network.

A consistent terminology for wireless texting/messaging has not yet been established, and terms such as "texting," "wireless messaging," and "mobile email" are often used interchangeably, and with different meanings. "Texting" is often used in the context of telephony SMS, and "messaging" is often used in the context of mobile email, but this usage is by no means universal. The best we can do is state clearly what we are talking about. Throughout this email and elsewhere, regardless of which terms we use, we are talking about an email-type service, with a richer functionality than today's telephony SMS. Specifically, we mean a mobile messaging service that:

- Supports the unconscious carry, always on, model for device usage
- Supports immediate (push mode) delivery and alert for right-now messaging
- Is a functional extension of Internet email, oriented to short text messages

Having stated our functional domain, it should be emphasized that the present initiative is not about service functionality—it is about the *service implementation and delivery model*. In terms of model, we now formally define **Libre Texting** as a mobile messaging service that:

- Is based exclusively on patent free protocols
- Is based exclusively on 100% free software
- Is delivered as a Libre Service
- Conforms fully to the Internet end-to-end model

The Libre implementation and delivery model represents our vision for the future of the mobile messaging industry. Our intention is to create a dynamic environment where specific component choices for devices, protocols, software and services are the result of technological innovation and competition based on the unconstrained Libre model. The Libre Texting model also guarantees a set of societal benefits and freedoms that are entirely lacking under the proprietary model.

## Our implementation: By* Libre Texting

We have implemented a Libre Texting Service using our own specific component selection. We call this the **By* Libre Texting** implementation.

The key component of our implementation is a set of mobile messaging protocols called the EMSD protocols. These are in fact the direct lineal descendant of the original pACT protocols, abandoned by AT&T and completed by Neda. The EMSD protocols fully satisfy the necessary technical requirements for mobile messaging. They provide the efficiency required for wireless applications, and support push-mode message delivery, an essential requirement for the expected immediacy of texting. They are truly open and patent-free, and have been published as RFCs. Complete details about EMSD are provided in the article titled, *EMSD: The LEAP E-Mail Component*.

Free software implementations of the EMSD protocols are available for all major device and message center platforms. This software is freely and publicly available at the BySource and ByBinary open-source software distribution centers.

In terms of mobile device, our initial implementation is based on the Nokia 810, a generic Linux-based PDA. We use local WiFi for wireless device connectivity, and our own Libre Texting message center. The result is complete, end-to-end Libre Texting functionality. In situations where local WiFi is not available, we use existing wide-area networks to provide second-to-last-leg, wide-area wireless connectivity, including our own MURS (public narrowband spectrum) network. Further details of the Libre Texting model and our By* implementation are provided in the form of a presentation document titled, *Libre Texting: A Reshaping of the Medium.*

The immediate focus of this email is the texting application, but it should be noted that By* Libre Texting is more than just a texting solution. It is part of something very much bigger: it is the strategic spearhead for introduction of the more general By* Libre Services. By* Libre Services provides the user with a complete computing and communications environment, of which By* Libre Texting is a single, seamlessly integrated component.

## The business consequences

Thus it is now possible to deliver Libre Texting capability without reliance on any proprietary asset or technology. A Libre Texting solution like ours, or using different component selections, can be implemented by any company or organization immediately. Any ISP or ASP now has all the assets and technology available to become a Libre Texting provider, virtually overnight.

The business consequences of this are immense.

The Libre Texting model is part of a more general industry transition: a major industry shift from the *for-profit, proprietary* quadrant, to the *for-profit, non-proprietary* quadrant. We described this in our previous Libre Services ideology email. The inevitable Libre Texting model represents a specific early manifestation of this more general trend.

We have analyzed the business consequences of the new Libre reality in the form of our Open Business Plan, which we introduced in our previous Engineering Responsibility email.

The walled garden model is coming to the end of its natural lifetime. But as one opportunity closes, another opens. But as always, industry changes require adaptation. Existing wireless providers must adapt to the new reality, or perish.

## Invitation to participate

Every aspect of this initiative is Libre—all assets are web published and available as a communal public resource. We invite you to evaluate our analysis and documents, and participate in this new texting model in your own context.

- As a mobile messaging user, when selecting a mobile device and messaging service we invite you to look beyond simple functionality, and consider the model in which the service is offered. The Libre model is inherently aligned with the interests of the user, fully guaranteeing your privacy and civil liberties.
- As a technical or management professional within today's proprietary mobile messaging industry, we invite you to prepare for the future. The walled garden model has been a wild ride, but now it's over, and the most actively-thinking network providers know when it's time to switch horses. The various documents and resources provided here will give you plenty to think about. Beyond that, if we can help in your planning and preparation please contact us directly.
- For active participants in the free software movement, we invite you to join us in advancing the Libre Texting initiative. To facilitate participation we have established a project-based model for collaborative action, described in the article titled, *Libre Services: Projects for Bootstrapping.* This document presents Libre Texting and other Libre projects that can benefit from collaborative work and enhancement.

Lastly, if you think what we are doing has merit, we ask you to help spread the word. Please feel free to forward this email to others who may be interested, either in toto, or in the form of the following link to its web-published transcript: http://www.neda.com/Records/0905081


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