The By* Family of Libre Services:
The future of the Internet Services industry

An Open Business Plan—Executive Summary

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This Business Plan is a live document, undergoing periodic update as our plans move forward. Both the latest version and previous versions are archived at the above location.

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1 Executive Summary

Neda Communications, Inc. is an Internet Application Services company. We provide consulting and Internet services to small-to-medium businesses (SMBs) and to individuals. We are a one-stop full-service shop—we maintain our own Data Center, and we provide a full suite of services for clients requiring any sort of Internet presence. Our revenues derive from the customary sources: consulting, website development, hosting, and subscriber service fees.

So far, there is nothing unusual about any of this.

But our technological model for delivering services, and our long-term strategic vision, are very different from the mainstream. Our Internet services model is radically different in two respects, each having major consequences. First, our Internet services are based on the free software development model. And second, they are a unified services model. For these reasons our model has the potential to transform the Internet Services industry completely, and become the new model for delivery of Internet services, planet-wide.

But first, a bit of stage setting.

1.1 Setting the stage

Part of the debate about free software is now over, while part continues. The part that is over is any question about the viability of free software as a development model for creating large-scale, complex, relevant software systems. GNU/Linux is a fully viable free software alternative to the proprietary Microsoft Windows operating system, against which it continues to make steady inroads. Mozilla is a fully viable alternative to the proprietary Microsoft Internet Explorer, and is also experiencing steadily increasing usage. These and numerous other free software projects—Apache, Qmail, Sendmail, Bind, Plone, Snort and many others—have now become essential and widely used components throughout the software and Internet industries.

And apart from such well-known and high-profile projects, behind the scenes the free software movement has become a flourishing creative environment, generating a constant stream of new and better software packages, duplicating and surpassing the capabilities of an ever-increasing portion of proprietary software territory.

And the fundamental free software creative dynamic has now also become very well understood: the free software development model allows *unrestricted creative reuse of existing assets at essentially zero cost*. It is from this dynamic that the free software model derives its tremendous generative power. Free software is thus fully established as a generative engine and an industry reality, and is here to stay.

But the part of the debate that continues is whether or not this has any meaningful commercial dimension. Within the proprietary software domain a powerful revenue-generating engine exists in the form of the traditional software licensing model. But this revenue source is absent under the free software model. In its place there are a number of possible business and revenue models, but in all cases these lack the large-scale repeatability that makes things really interesting from a business perspective.

There thus remains a conceptual gap, a puzzle, about how the powerful generative forces of free software can be turned into a large-scale, repeatable, revenue stream. But this puzzle is now solved. And in this business plan we present the solution.

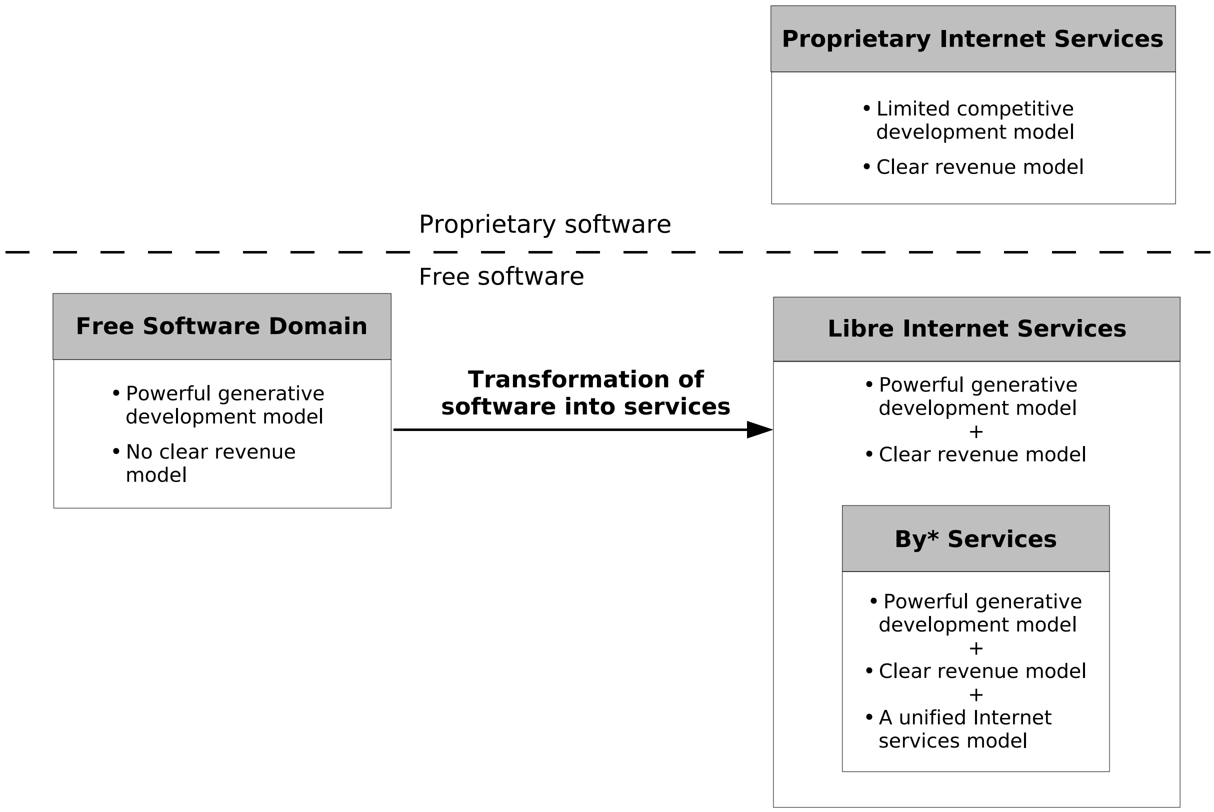

Figure 1: Free and Proprietary Software Domains

1.2 The transformation of software into services

The Internet has given rise to an enormous new industry: the Internet Services industry. And within this industry the business and revenue models are quite clear and obvious. The largest and most obvious are the subscription fee model of generalized service providers such as AOL, and the advertising model of numerous specialized no-cost service providers, demonstrated most spectacularly by Google. Both the subscription fee and advertising models are unlimitedly scalable, thus resulting in the gigantic commercial Internet of today.

But the Internet Services industry of today is a fundamentally proprietary construct. While proprietary service providers can and do make frequent use of free software components within their services, they do not espouse the free software development model itself, and their technical development process remains competitive and proprietary. Though they may incorporate free software components, AOL and Google are certainly not free software.

Thus as we look at the software and Internet industries of today we see two largely disjoint cultures. As illustrated in Figure 1 we see the free software domain, with its powerful generative and propagative development model, but lacking any clear large-scale monetization model. And separate from this we see the proprietary Internet Services domain, with enormous revenue and business consequences, but handicapped in scope and scale by its competitive development model.

But now we are witnessing a further transformational event in the evolution of the Internet: a shift of traditional software applications towards a service-based implementation, or what is sometimes called the "transformation of software into services." And this is the critical event that now solves the free software revenue puzzle. This development unites the generative power of the free software domain with the proven revenue models of the services domain. The transformation of software into services *allows the powerful generative model of free software to be invested directly into the powerful revenue model of the Internet Services industry*.

1.3 Free and proprietary software: cultural incompatibility

But how is free software to fit into the proprietary Internet Services domain? The answer is: not very well. As we have noted, a proprietary service provider can make use of free software components. But by doing so the service provider is taking only limited advantage of free software. To take full advantage of the energy and productivity of free software, the service provider must do more than this—it must adopt the free software development model itself.

But a service provider cannot adopt the free software development model, while remaining a proprietary service. The free and proprietary software cultures are fundamentally incompatible, and a company cannot commit to both value systems at the same time. Within the free software culture, software is considered a communal public resource. Within the proprietary culture, the basic software proposition is *this-is-mine-and-you-can't-have-it*. The conflicts and contradictions between these two value systems are too many and too pervasive for them to coexist within the same organization.

A successful company requires clarity of vision and unity of purpose, and must therefore define itself. So in the matter of software patents, copyright and trade secrecy, the company must take a coherent position. Either these intellectual property constructs are part of its business model, and its corporate mentality, or they are not. With a foot in both camps, the company is fundamentally conflicted.

A proprietary service provider is thus greatly limited in its ability to fully participate in and benefit from the generative power of free software. What is required instead is a new model for Internet services, one that is fully aligned and consistent with the free software development model. We call this the Libre Services model.

1.4 The Libre Services model

Libre Services are an extension of the principles of free software into the Internet services domain. They are Internet services that can be freely copied and reused by anyone. Any company or organization can reproduce and host any Libre Service, either for its own use, or for commercial or non-commercial delivery to others. The Libre Services model exists in relationship to the proprietary Internet services model of AOL, MSN, Yahoo, and Google, in an analogous way to how GNU/Linux exists in relation to Microsoft Windows.

Thus the Libre Services model, like the free software model, allows *unrestricted reuse of assets at zero* *cost*. In the case of Libre Services the assets in question are services constructs rather than software constructs, but the end result is the same: Libre Services reproduce the powerful generative and propagative forces of free software within the Internet Services arena.

Like free software, Libre Services are a genuine public resource, not owned by anyone, freely available for reuse by anyone. They are created by society, for society. This means that the services are inherently aligned with the interests of the user. Under the proprietary model there is an inescapable dichotomy of interest: that of the user on the one hand, and that of the proprietary service provider on the other. But under the Libre Services model, this dichotomy is dissolved. And by virtue of being free and open, Libre Services guarantee a set of critical civil liberties that are not guaranteed under the proprietary services model—indeed, that are routinely violated under that model.

To the business mentality it may seem quaint, even comical, to advance such ethical considerations within the context of a business plan. But these critical characteristics of Libre Services represent a profound motivation for acceptance and usage of the services by society. It will take some time for this motivation to become apparent, but it is there, and its effects are real.

1.5 The By* model

The Libre Services model is one radically different dimension of our services model. There is a second dimension, also radically different, and also having major consequences. This relates to the capabilities of Internet services in purely functional terms. Whether proprietary or Libre, what can the services actually do, and how well can they do it?

There is no question that Internet Services represent a phenomenally dynamic, thriving industry, bringing revolutionary new computing and communications capabilities to the world, and accompanied by equally phenomenal business opportunities. This much is obvious.

But the Internet Services industry of today is also a gigantic mess. It has arisen in a completely unplanned, disorganized, chaotic manner, lacking any sort of uniformity or consistency of structure, and in many ways it is wildly dysfunctional. This is not so obvious. But as software and Internet engineers, having been actively involved in the technical Internet from the beginning, we know this to be the case.

And while this may not be apparent to the everyday user, having never experienced anything different, this limits the capabilities of Internet services in many ways. The Internet Services industry of today, dynamic and thriving though it may be, is in a sense crippled. It falls far short of what it can be, and what it can do, if designed for full, consistent, uniform interoperability across all types and manners of service usage.

The By* (pronounced “by-star”) model solves this problem. By* is a unified services model, unifying and making consistent a large number of services that currently exist in functional isolation. For example there is Yahoo. And there is Craigslist. And there is MySpace. But there is no connectivity or integration among these, though such joint interoperability would greatly augment the capabilities of all these services. As with technology in general, proper integration creates a new construct, bigger and better than the sum of its parts.

Today, a user’s Internet experience is scattered across numerous disparate services. In particular, a user’s personal presence on the Internet—her individual data and self-representation—is fragmented and duplicated among a multiplicity of service providers. Today she has many usernames and many passwords. Under the By* model, she will have only one.

By* is a coherent, integrated family of services, providing the user with a comprehensive, all-encompassing Internet experience. It includes services for individuals (ByName, ByNumber, ByAlias, ByMemory), services for business entitities (BySMB/ForSMB), services relating to physical locations (ByWhere) and events (ByEvent), and services for publication of information (ByTopic). Last and most important, By* includes a set of services allowing complex interactions among persons, businesses, and things (ByInteraction).

In terms of end-user functionality the services will eventually provide a large superset of the computing and communications capabilities that exist today. Meanwhile the services are evolving and will continue to evolve towards this goal. Up-to-date details about the current and planned capabilities of each service are provided on the service websites themselves. A complete list of all service websites and their supporting documentation is provided in Section 1.14, "Summary of references and pointers."

By* is the model for a new generation of Internet services, far bigger and far better than the uncoordinated mishmash of services that exist today. By* is the Internet services industry, done right.

1.6 Our strategic vision

As shown in Figure 1, the By* services embody a set of attributes that exist nowhere else in the Internet services industry. By virtue of being Libre Services, they are a proper vessel for receiving the creative productivity of the free software development model. And also by virtue of being Libre Services, they reproduce that same creative productivity within the services domain. By virtue of being Internet services, they inherit the gigantic revenue engines of the proprietary Internet services domain. And by virtue of being a unified services model, they far surpass the capabilities of the existing, functionally fragmented industry.

All this gives the By* model enormous potential. By* can become the new model for delivery of Internet services, at the scale of the entire planet. Our ambition is to lead By* forward to the full realization of this potential.

To many, this ambition will appear implausible and unrealistic. But it is based on the tremendous generative power of the free/Libre model. Though few understand this, a watershed event is currently taking place within the software industry: the proprietary software model is being overtaken by the free software model. The battles will continue for years to come, but the war is already lost: the proprietary model is marked for extinction, and the future is free software. As engineers, as software experts at the forefront of our industry, we have recognized this well ahead of the industry at large—and certainly far in advance of the business community. Though the demise of the propriety software industry may seem implausible today, this is already as much a reality as global warming.

Without a clear understanding of this reality, none of what we are saying makes sense. With this understanding, all of it does. We are a small group of engineers who fully understand the power of the free/Libre model. What will make all of this work is the extraordinary generative power of Libre, and our ability as engineers to shape and direct this power to extraordinary effect.

1.6.1 Not a tear-down and rebuild model

It must be emphasized that what is being presented here is not a tear-down and rebuild operation.

The Libre Services and By* models are revolutionary, and can be expected to have a revolutionary effect on Internet usage. But these models are about service development and functionality, not about technological infrastructure. We are not reinventing the Internet protocols, or any other technical aspect of Internet operation.

Libre Services and By* imply no discontinuity, in terms of either technology or service deployment. The implementation model for Libre Services and By* is wholly evolutionary—there exists a continuous migration path from the proprietary model of today to the Libre model of tomorrow.

1.7 This is all real

So far, everything we have said has been theoretical. Let us now turn to the practicalities of the matter. By now it will be clear to the reader that what we are proposing is rather colossally gigantic. But we have been actively working on this initiative since 2001, and our implementation is now well advanced. In terms of what we have built, this written Business Plan is just the tip of the iceberg.

Far from being empty theory, all this has substantive reality. Libre Services and By* are not just an abstract concept or a distant mirage. They are real constructs that we have built and are delivering to our clients today.

- **A real conceptual foundation**. We have fully defined and documented the Libre Services concept. We have also enabled this model by establishing a formal framework for industrywide participation in Libre Services development. This component of our work has been done under the auspices of the Free Protocols Foundation, a non-profit organization separate and distinct from Neda. Complete details are provided in Section 5.2, "Libre Services participation."

- **Real services**. We have implemented the initial components of By* and established a starting point set of services. The various By* services and websites are summarized in Table 2. The services are in varying stages of development—some in operation, others under active development, and others at concept level only. But the initial services are in place, and the rest will follow. The current status of all By* services is summarized in Table 5.

- **Real clients**. By* services are currently in use by a number of our individual and business clients. The scale of usage is small, but nevertheless these are real, supported, working services. Examples of existing individual and BySMB users are provided in Table 3.

- **Real assets**. We have been actively working on this initiative since 2001, and we have created a complete conceptual blueprint and a coherent set of assets to turn our ambitions into reality. A description of the relevant assets and their current status is provided in Section 8, "Status and Assets."

  We host the By* services at our own Data Center, and this is therefore a particularly important asset. The Data Center is complete and operational in all respects, and capable of supporting all By* services up to medium operational scale.

- **Real revenues**. There are multiple revenue sources associated with the By* deployment. In addition to the subscription fee and advertising models already mentioned, Libre Services and By* create a number of additional revenue sources not present under the proprietary services model. All revenue sources are described in Section 6, "Revenue Models," and summarized in Table 4.

- **A real company**. Neda Communications, Inc. is a well-established company with a proven track record of technical proficiency and profitability. Neda was founded in 1991, and between 1991 and 1997 operated as a successful data communications consulting company, with average revenues from 1993 to 1997 of over $1 million annually.

  Since 1997 Neda has exercised active leadership in an evolving series of industry initiatives, leading up to the present By* initiative. Over the past several years our vision and focus has been the creation of the assets required to execute this Business Plan. To date Neda has received no external financing. Details are provided in Section 12, "The Company."

- **A real team**. Neda has a core team of engineering and management personnel with extensive experience in the technical Internet and data communications fields. Among the team there are relationships going back many years, reflecting a long history of productive cooperation. In particular the following key team members have worked together closely and committedly on this initiative since 2001:

  Mohsen Banan. Mr. Banan is the founder of Neda Communications and the team leader. He is the intellectual originator and visionary behind the Libre Services and By* concepts. His professional biography is available at his public ByName site at:
  http://mohsen.banan.1.byname.net/ProfessionalBio

  Andrew Hammoude. Dr. Hammoude represents the written word of Neda Communications. All mission-critical exposition of the Libre Services and By* concepts has been created by him. He has been with Neda since 1999. His professional biography is available at his public ByName site at:
  http://andrew.hammoude.1.byname.net/ProfessionalBio

  Pinneke Tjandana. Ms. Tjandana has built a large part of the operational and developmental components of the By* services. She has been with Neda since 1998. Her professional biography is available at her public ByName site at:
  http://pinneke.tjandana.1.byname.net/ProfessionalBio

  Information about other Neda team members is available at:
  http://www.neda.com/AboutNeda/CompanyProfile

It's all real, and every day it gets realer.

1.8 Key execution strategies

We have formulated a coherent execution plan for deploying the By* services, developing the various revenue streams, and moving this initiative forward over time. Complete details are provided in Section 7, "Execution." In the following sections we describe some of the key elements of our execution strategy.

1.8.1 Marketing strategy: Engineering vs. Business polarization

We are facing a major service uptake challenge. First, we are in a very crowded and noisy arena. The general Internet services domain includes many established services, plus a constant stream of new commercial initiatives, all competing for user attention. The domain of social networking services is a particularly intense focus of competitive activity at present, and By* asserts its own emphatic presence in this domain also.

Furthermore, we are latecomers in an increasing returns business. Many existing service providers already have a large and growing base of users, with whom they have an already established relationship.

A big part of our service uptake challenge is met by the inherent growth dynamics of the Libre and By* models themselves. These are discussed at length in the document titled, *The By* Concept: A Unified Model for Internet Services* [**?**].

But in addition to this, a strong marketing message is required to differentiate By* from other services, and pull subscribers away from existing providers. We have a coherent and powerful set of marketing messages to address this requirement. These are:

- The By* services, by virtue of being Libre Services, are inherently on the side of the user. No proprietary service can make this assertion, and this provides us with immediate differentiation from all existing Internet services.
- By* provides a total, integrated Internet services solution, delivering everything needed by the user. This is in contrast to the existing patchwork of functionally fragmented services, each delivering only a component of what is needed.
- The metaphor of a war between Engineering and Business.

In our first marketing message we position By* as inherently aligned with the interests of the user, in contrast to proprietary services which are ultimately aligned with the interests of the provider. But we will go much further than this. We will broaden this message into something much bigger: we will actively promote a *militant polarization of Libre as an Engineering construct, versus proprietary as a Business construct*.

Today, the Internet services industry is owned entirely by business interests. But the Libre Services and By* initiatives represent a startling challenge to this: they represent a determined reassertion of proper guardianship of the Internet by Engineering. This challenge will bring us into massive conflict with existing commercial interests, who will fight ferociously to defend the status quo.

Table 1 shows the many elements of contrast between the Engineering and Business value systems. As the table makes clear, these two values systems are in complete and total conflict. We will fully exploit this conflict as the metaphor of a war: a war between Engineering and Business, in which Business represents exploitation of the Internet for profit, and Engineering represents guardianship of the Internet on behalf of the public.

We are thus taking an assertively militant, combative position. We have had previous experience in generating attention by this means. In 2000 we wrote and widely distributed a document titled, *The WAP Trap* [**?**]. This was a public exposé of WAP, a shoddy and exploitative business construct. *The WAP Trap* successfully created interest and press coverage; for details see http://www.neda.com/AboutNeda/News/WrittenAboutUs. Our highly assertive By* marketing messages will create publicity and press coverage in much the same way, though we expect on a much larger scale.

Our marketing messages are new, powerful, unique, and cannot be asserted by any other service provider. Together with the inherent growth dynamics of the By* services themselves, these marketing statements

Engineering Values	Business Values
Patent-free	Patented
Copyleft	Copyright
Transparency	Secrecy
Public ownership	Private ownership
Sharing, collaboration	*this-is-mine-and-you-can't-have-it*
Guardianship	Exploitation
Libre Services	***Proprietary Services***

Table 1: Engineering vs. Business Polarization

can create broad cultural acceptance of the Libre model, and can pull users away from the existing proprietary providers.

1.8.2 Marketing jujitsu: business based on non-business

Marketing is about perception, not reality. But it is worth noting that our marketing messages are, in fact, wholly congruent with the underlying reality. The central element of our message, that the By* Libre Services are inherently on the side of the user, is perfectly true. It is true because they are a purely engineering construct, created solely in the public interest, and not beholden to any private commercial interest. When the message is congruent with the reality, the result is a tremendously powerful marketing imperative.

Today, the public is generally oblivious to the perils of the proprietary services model, and cheerfully entrusts its personal data, its privacy, its freedoms and its civil liberties to proprietary business interests. But this will change. And as it does, as general public awareness grows, our marketing messages will resonate ever more strongly with the public, the media, and our fellow engineers.

The By* services are unique in that they are a business model based on the Libre model, which in turn is an engineering construct residing entirely in the public domain. We are thus using the inherently non-business nature of the By* services as a critical element of our business strategy. This is the unique marketing jujitsu made possible by the Libre model.

1.8.3 Marketing synergy: Libre Services leadership

The full scope of this initiative includes two distinct dimensions: the public side, represented by the general Libre Services concept, and the commercial side, represented by the Neda By* services and this business plan.

We have described above our By* services marketing strategy, centered around By* as a commercial offering by Neda. But in addition to this we are the visionaries and leaders of the broader Libre Services movement, and this provides us with a further unique promotional vehicle.

Libre Services are new and interesting. They are altogether unlike the existing proprietary model. They are a genuine communal resource, created by Engineering as a gift to society, inherently aligned with the interests of the users, and providing guaranteed guardianship of personal freedoms and civil liberties. This is new and different. It is interesting, puzzling, and thought-provoking. Above all, it is newsworthy. Our leadership role in the Libre Services movement will bring us a unique level of visibility and name recognition.

Our leadership of the Libre Services movement and our marketing of the By* services are strongly synergistic: attention directed towards one naturally brings attention to the other. We will therefore conduct a strategic coordination of these two activities: we will assert our leadership of the Libre Services movement in close coordination with the initiation of our By* marketing campaign. In this way we will greatly amplify the effectiveness of both.

Furthermore, both of these activities create the opportunity for revenue growth by Neda. We will therefore coordinate the above two activities with a third: the public exposure of the By* services as a revenue-generating engine.

We will execute all three activities at precisely the correct moment: the moment at which we are able to deploy and support the By* services at scale. This triply coordinated execution—of Libre leadership, of By* marketing, and of By* services exposure—will bring unique visibility to Neda. By choosing this moment correctly, we will turn that visibility directly into revenues.

(*Nota bene*. Throughout this Business Plan we are focussed on the success of the By* services as a commercial initiative, and in this section we have described how our promotion of the Libre Services movement contributes to this success. But it must be emphasized that this does not imply any marginalization of the Libre Services movement, or the subordination of the goals of the Free Protocols Foundation to those of Neda.

This initiative includes two major dimensions, and each is an essential requirement for the other. Just as the Libre Services movement provides the essential context for By*, so the existence of a coherent business model is essential for widespread deployment of Libre Services. These two dimensions are closely interdependent, and success of one contributes directly to the success of the other.)

1.8.4 Engineering development model

As we have noted, the free software movement is a flourishing creative environment, constantly producing new and better functional software components. Indeed for any particular functionality there are typically multiple alternative free software packages available.

In this environment the model for implementation of By* service functionality is not one of original software development. Rather it is a matter of selection and integration of already available software packages. Virtually all existing By* service functionality has been created this way—in building By* we have written almost no new software at all.

Thus we are not so much in the business of software development, as we are in the business of software integration. But the integration of software components to produce a coherent service is far from trivial. We have created a sophisticated technical integration environment for this purpose, called the **Neda Libre Services Integration Platform** (Neda-LSIP). Neda-LSIP is a comprehensive set of tools and conventions for the transformation of software into services. Neda-LSIP is the key technological component of our realization of the concept of Libre Services, allowing practical and cost-effective aggregation of free software components into coherent services. Neda-LSIP is free software itself, available under the Affero

GPL version 3 license. For complete details see the document titled, *Neda-LSIP Design and Implementation Notes* [**?**].

Moving forward, we will continue to select and incorporate additional functional components into By* as these materialize within the free software environment. This is the extraordinary magic of free software: the ability to take things and reuse them at extremely low cost. This is the fundamental growth dynamic of Libre Services, and the powerful generative force that is lacking in the proprietary model. This is the key dynamic that causes the By* Libre Services eventually to surpass the proprietary model entirely in terms of features and functionality.

1.8.5 Engineering design for scale

By* is designed to be big. Big in every respect: in terms of functional scope, in terms of depth of integration, and in terms of numerical scale. Our goal is to establish By* as the new model for delivery of Internet Application Services for all individuals, and all businesses, everywhere. The intended scale for By* is the entire population of planet Earth.

Every aspect of our model and execution strategy is directed towards achieving this numerical scale. In particular, all our engineering design decisions have been made with scalability as a critical requirement. For example:

- Overall design of the By* services is based on a highly distributed architecture, with no inherent number limits. The services are unlimitedly expandable in terms of hardware infrastructure.
- An important design decision is the selection of the right free software components for integration into By*. All software components have been chosen with scalability as a key requirement.
- A consistent naming scheme is essential in order to create object instantiations at extremely large scales. The By* architecture incorporates a hierarchical naming model, based on consistent and extensive use of the Internet domain naming system. This allows the naming and addressing of unlimited name spaces within the By* structure.
- We built our own in-house Data Center right from the beginning, giving us the ability to scale up without requiring an initial colocation phase. With our own Data Center we can scale up operations efficiently and economically, under a wide range of operational contingencies. The Data Center can support deployment of By* up to medium operational scale.

1.8.6 Focus on model, scope and scale

This is a model play. This is not about a new product or service, as these are commonly defined and bounded. This is about an entirely new paradigm for Internet service deployment and usage.

Thus what we are building here is *inherent model potential*. We are not building limited service functionality for a limited scale of delivery. Rather we are building gigantic potential: for the creation of vast scope of functionality, and global scale of delivery.

Throughout our execution strategy we maintain proper focus on this goal. In particular our major effort has been devoted initially to defining the Libre model, designing the By* architecture, and building the machinery necessary for large scale execution. With these critical enabling components in place, only then do we attempt to deploy By* as a large-scale service.

Certainly, we could have invested our initial effort in building and deploying By* as robust services, and creating an initial user base. But this would amount to a traditional service play, not a model play. This would leave us with a service in place, but without the powerful generative model characteristics that give By* its planet-wide potential, without our unique leadership role, and without our model-based marketing messages.

1.8.7 Growth of user base: timing

An important consideration is the point at which we begin to accept the burden of significant numbers of users. In the case of a conventional service deployment there is typically a major emphasis placed on early and rapid growth of user base, to demonstrate demand and marketplace viability of the service, and lay claim to a particular portion of functional territory.

However we are not following this standard early proof-of-service approach. This may be appropriate for a conventional new service, where service functionality is the central and most critical issue. But for our industry model play, a different timing strategy is required.

First, as a superset of numerous existing services, proof of service for By* in functional terms is already demonstrated by the Internet Services industry as it exists today. It is far more important to prove the model itself rather than its functional manifestations, and hasty creation of user base does little to accomplish this.

Instead we have provided a coherent and complete description of the model in this and our other documents. The theoretical basis for the model is solid, and this will be clear to anyone willing to invest the time to understand it. In addition a number of working By* implementations are already in place; examples are provided in Table 3. Though the scale of usage remains small, these are sufficient to demonstrate the viability of the Libre model and the By* design, and the value of the resulting services to paying clients.

But a far more important consideration is that installed base is very costly in terms of maintenance and support, and premature exposure to these costs can jeopardize the more critical work of building the underlying model machinery. Therefore we will not take on the burden of user base until the time and/or context is right for this. This means either that we are fully ready to accept the associated costs of ownership, or that the user base is being taken on in an appropriate context, such as a suitable business partnership.

Under either scenario our strategy is the same: at the right time we will populate the services at large scale by mass creation of By* service accounts for large existing user bases. Our strategy for accomplishing this is described in a separate document titled, *The By* Family of Libre Services for Network Service Providers: A strategy for rapid entry into the Internet Application Services market* [**?**]. This document describes how a Layer 3 service provider can become a Layer 7 service provider virtually overnight based on the By* Libre Service model, and can begin delivering Layer 7 services directly to its entire Layer 3 user base.

1.8.8 Collaborative binding: an open vertical keiretsu

The Libre model creates an entirely new business environment in terms of competition, collaboration, and value chain relationships.

In the proprietary model, businesses can and do enter into technical collaboration and strategic partnership. But within such partnerships, the partnering companies remain intensely focussed on intellectual property ownership considerations. Even before any serious discussion can take place, the prospective partners implement restrictive Non-Disclosure Agreements (NDAs) to protect each other's trade secrets. And when the partnering companies are eventually able to agree on the nature and scope of a collaborative project, technical development takes place in the context of closely negotiated agreements about who owns what, and how patents, copyrights and royalties are to be divided among the companies.

Thus proprietary technical collaboration, like porcupines mating, includes a strongly anti-collaborative component.

The Libre Services model, however, represents a complete renunciation of the existing intellectual property regime. (Indeed, we consider the very term "intellectual property" to be problematic, implying as it does an extension of the logic of physical property ownership into the non-physical realm of software and ideas.) Under the Libre model, software and services are a public resource, owned by no one. Patents and copyright are rejected entirely. With these (so-called) intellectual property constructs out of the way, there are no obstacles to collaborative services development and integration. The Libre model is thus inherently collaborative in nature.

Yet within the Libre environment, other perennial business considerations remain in full force. Competition and strategic maneuvering remain alive and well, but these take place at points of contact outside the technical development arena. Fundamental business questions remain, such as: What are the natural business alliances? How is risk to be shared among such alliances? How are revenues and profits to be divided?

The Libre business environment is new, and in time it will establish its own conventions to negotiate and settle these questions. The details of how this will occur is not our concern or responsibility. However it is our responsibility to define and maintain our own strategic positioning within this environment.

By* Libre Services creates a new, extremely large and complex value chain. Our key strategic positioning within this chain is as the top-level services aggregator, having a direct relationship with the end user. This positioning presents Neda with unique opportunities and responsibilities. Our unique opportunity is to profit from this position. Our responsibility is to promote and enlarge the value chain, while maintaining our positioning in the face of strategic actions by both competing and collaborating companies.

The elimination of proprietary competitive tensions from the technical development arena, together with the shared anti-IP mindset of collaborating companies, creates a new form of binding among value chain partners—what we call an open vertical keiretsu. We invite others to join us in expanding and profiting from By*. If you have a Libre component that fits well and that you wish to integrate into By*, or if you are interested in a longer-term business relationship for development of a particular branch of By*, please contact us. We have ample Neda equity available to promote early-stage business partnerships.

1.8.9 Competitive advantages

The Libre Services industry presents an entirely new competitive environment. For any provider deploying a Libre Service, it is no longer possible to maintain sustainable advantage on the basis of proprietary service ownership. Nor is it possible to create advantage on the basis of functional service differentiation from other providers.

A complete discussion of our competitive advantages within this environment is provided in Section 10, "Competitive Advantages." But there are two in particular that provide us with unique advantages over any potential competitor:

- We are the originators and architects of Libre Services and By*, and we are playing a unique leadership role in their industry-wide promotion and deployment. There can be only be one leader, and we are it.
- By* is a total services solution, vast in scope, highly scalable, designed for the long-term, big picture future of the Internet. This immense scope is reflected in the By* design architecture. The design is sophisticated and complex, allowing highly generalized interactions among the many By* components.

  This represents vision, depth of understanding, and a far-reaching intellectual investment. This cannot be easily replicated or understood by others. Yet we have a clear understanding of By* in every detail. This depth of understanding will guide our deployment and strategic maneuvering for years to come. This amounts to a major conceptual lead time over any potential competitor.

1.9 The Spearhead: By* Libre Texting

The scope of By* Libre Services is so vast that it is hard to believe.

We therefore need an initial point of focus to demonstrate the true reality and power of By* Libre Services. A clear value proposition and a real, concrete problem domain are required for this. We have chosen the domain of Mobile Messaging as the tactical spearhead for By* Libre Services. We call this **By* Libre Texting**.

By* Libre Texting is in a sense the merging of By* with our 2001 Business Plan [**?**] and Operation Whiteberry [**?**]. By adding to By* all the assets that we had previously developed in the Mobile Messaging arena (RFC-2524 [**?**], RFC-2188 [**?**], EMSD.org, ESRO.org, the LEAP Software, *The LEAP Manifesto*), we now have a powerful and complete set of assets.

In contrast to Operation Whiteberry, which required the mobile phone companies to relinquish their walled garden model, By* Libre Texting is fully self-contained and complete, requiring no proprietary external assets.

We have documented and are promoting this initiative in the form of a comprehensive presentation titled, *By* Libre Texting: A Reshaping of the Medium* [**?**]. The evolution of the original Operation Whiteberry into today's By* Libre Texting has taken about 10 years, as various components of the industry have gradually caught up with our long-term vision of Libre Mobile Messaging. In particular, the following three components were absent in 2001:

- Open Linux PDAs (e.g. Linux Nokia 810).
- Widespread availability of WiFi, for final-leg connectivity.
- Public/unlicensed spectrum (e.g. MURS), for wide-area connectivity.

But with these elements today in place, a complete Libre texting solution is now fully viable.

To provide a complete end-to-end texting alternative to SMS and BlackBerry, we use the Nokia 810 Linux PDA as our device hardware platform. The device protocol software is the native Linux EMSD-UA package. On the services side, EMSD-SA is a standard part of By*.

Details of our execution plan for By* Libre Texting are available in presentation format in *By* Libre Texting: A Reshaping of the Medium* [**?**]. A large part of the content of our 2001 Business Plan [**?**] also continues to apply to By* Libre Texting.

Figure 2 shows the technological context for By* Libre Texting. This figure shows the various conceptual and software layers that By* Libre Texting is built on. As the figure shows, the By* Libre Texting (mobile messaging) capability resides at the very top, representing a vertical slice of the highly generalized By* capabilities. This well-defined vertical application provides precisely the concrete value proposition required for initial market penetration by By*.

Each of the layers shown in Figure 2 represents either a conceptual definition, or an actual software/service implementation. On the business side, the value chain model has an analogous layering structure. As discussed in Section 1.8.8, “Collaborative binding: an open vertical keiretsu” our strategy of maintaining our position at the very top of the value chain is supported by our assets throughout all layers.

1.10 Where we are today

In broad summary this is where we are today:

- Articulation of the Libre Services conceptual model is complete and fully documented.
- We have built the assets and infrastructure necessary for widespread exposure of any part of this initiative. This includes a comprehensive website presence, and a sophisticated e-mail capability for highly efficient marketing and communications operations. See Section 1.14, “Summary of references and pointers,” for a summary of our very extensive website assets.
- Overarching design architecture for the By* services is complete. It is also implemented sufficiently for someone with the necessary technical skills to understand the integrity and philosophy of design, and the architectural characteristics in terms of functional scope, depth of integration, and numerical scalability.
- Implementation of the By* services themselves is in progress. In terms of functionality, the initial services are already sufficiently complete for deployment and usage. A number of example implementations are in place; these are summarized in Table 3.

  In addition, the By* Factories—the software machinery required for fully automated creation of new service instantiations—are also complete and in place. We thus have the ability to create unlimited numbers of new accounts in batch mode, or at any time we can “enable” the services, to permit self-service account creation by individual and business users.

  However the services are not ready in terms of security, operational manageability, and scalability. Substantial work remains before we can support large numbers of users reliably and efficiently. This is the last remaining phase of work to be accomplished before we can deploy the services at large scale.

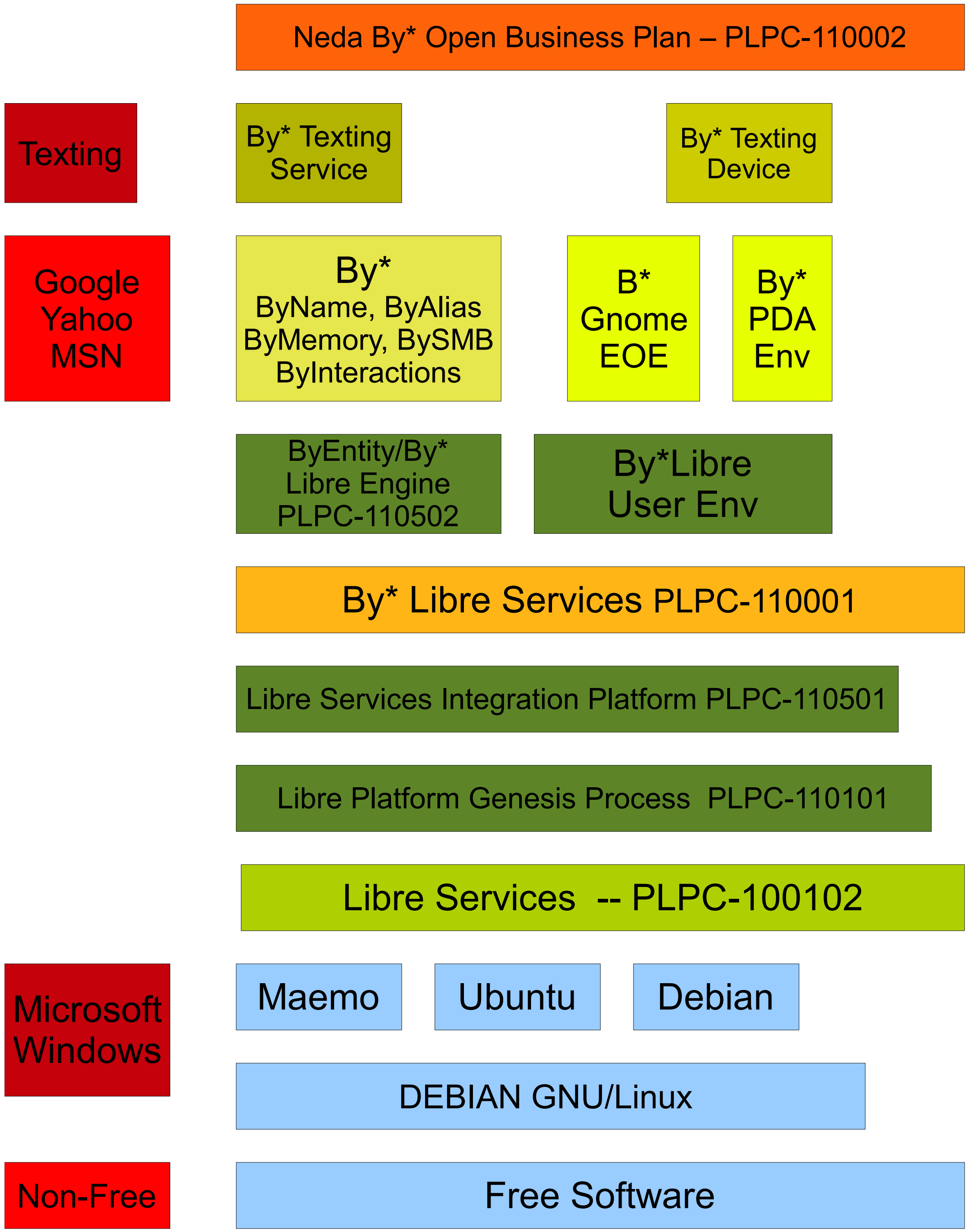

Figure 2: By* Libre Texting Layers

1.10.1 An immense construct

Over the past several years we have built something quite extraordinary. We have built a sophisticated machine, that when set into motion, can redefine the entire global Internet.

And we have done all this based entirely on our own determination, hard work, and committment. Everything we have built thus far has been driven by our own efforts, without external funding, financed entirely by our revenues as a consulting company. We are a small team, and we have foregone company revenues and personal income over an extended period. Yet despite these sacrifices we have stayed together and continued to work committedly on this since 2001.

The results, we believe, speak for themselves. This business plan is the topmost element of an immense construct. Section 1.14, "Summary of references and pointers," provides a roadmap to the many interlocking elements of this construct. We invite the reader to take a look, and see for yourself.

1.11 Moving forward

Moving forward from this point we will execute the following items:

- We will complete the final leg of technical work required to support large numbers of users.
- At the right moment we will initiate a coordinated exposure campaign. We will make widespread exposure of the general Libre Services model and claim our leadership role; we will initiate our highly assertive By* marketing campaign; and we will make public exposure of the By* services themselves.
- We will continue to seek consulting projects and Internet services clients that are well aligned with our strategic objectives.
- We will seek out business partners with whom our strategic direction has strong resonance. An important component of this is our strategy for seeking out By* service deployment partners; this is described in a separate document titled, *The By* Family of Libre Services for Network Service Providers: A strategy for rapid entry into the Internet Application Services market* [**?**].
- We will continue to augment the framework for participation described in Section 5, "Framework for Participation."
- We will continue to expand the services in terms of functionality, and we will continue to harden our deployment infrastructure in terms of security and operational manageability.
- Based on all the above, we will begin to scale up the services and develop a growing, recurring revenue stream.

Beyond the above near-term items, the large scope of this initiative permits great flexibility of execution. By* has great breadth and depth; it is the equivalent of multiple conventional business plans rolled into one. And as we discuss in Section 6, "Revenue Models," it includes many opportunities and revenue streams. This multiplicity of opportunity allows our execution to be readily adapted to changing circumstances. Our overall execution plan is therefore highly reactive and responsive to events as they unfold.

In terms of By* service functionality, at this point we have established a stable functioning system, which will form the basis for ongoing engineering development. Moving forward from here we will execute an incremental implementation strategy, continuously adding new functionality and expanding the scope of this stable system.

Scaling up of the services will be contingent upon the availability of appropriate resources. The By* Factories are ready, but we will not exercise these at large scale until we are ready to accept the associated maintenance and support demands. In the meantime we will continue to populate and expand our Data Center usage at a small-scale, controlled rate.

Our general exposure campaign will likewise be contingent on circumstances. The assertion of our leadership role and other exposure activities are a matter of degree, and can be executed to greater or lesser extent. We will execute exposure in proportion to our ability to scale up the services and convert that exposure into revenues.

Other aspects of our execution plan are similarly reactive. In terms of external financing, the plan is fully adaptable to the availability of financing, addressing the full range of possible financing contingency. In particular we have a coherent execution plan for a wholly self-financed mode of operation; details are provided in Section 7.4, “Adaptability to financing.”

1.12 The need for broad participation

Based on our own efforts, we fully expect that we will complete the final phase of technical work, and we will reach the critical threshold at which the By* services begin to generate a growing, recurring revenue stream.

But there is what we can do on our own, and there is what we cannot do.

Neda now stands at an absolutely critical point in its development. Over the past several years we have built an extraordinary revenue-generating machine. But despite its phenomenal potential, this machine cannot generate any meaningful revenue until it is complete, and until it is exposed. We are now moving towards a crucial moment: the moment at which this machine begins to turn.

On our own we can and we will reach this critical threshold. But we cannot sweep up to and beyond this threshold swiftly and with certainty. We cannot exploit the many By* revenue opportunities intensively and in parallel. And we cannot deploy By* at the very large scale for which it is intended.

Though we have created a model with enormous potential, though we have a unique leadership role and unique marketing messages, our ability to convert this gigantic opportunity into revenues is desperately limited. On our own we are limited to a small-scale, incremental mode of execution. In this mode we cannot execute rapidly, intensively, and at large scale. We are simply too small, and we do not have the resources.

A small team is ideal for conceptual analysis, model articulation, and architectural design. All this we have accomplished. But now we need to bring in others. With what we now have in place, we are now ready and the time is right for us to move forward to planet-wide scale. And for this we need people, we need business partners, and we need investment.

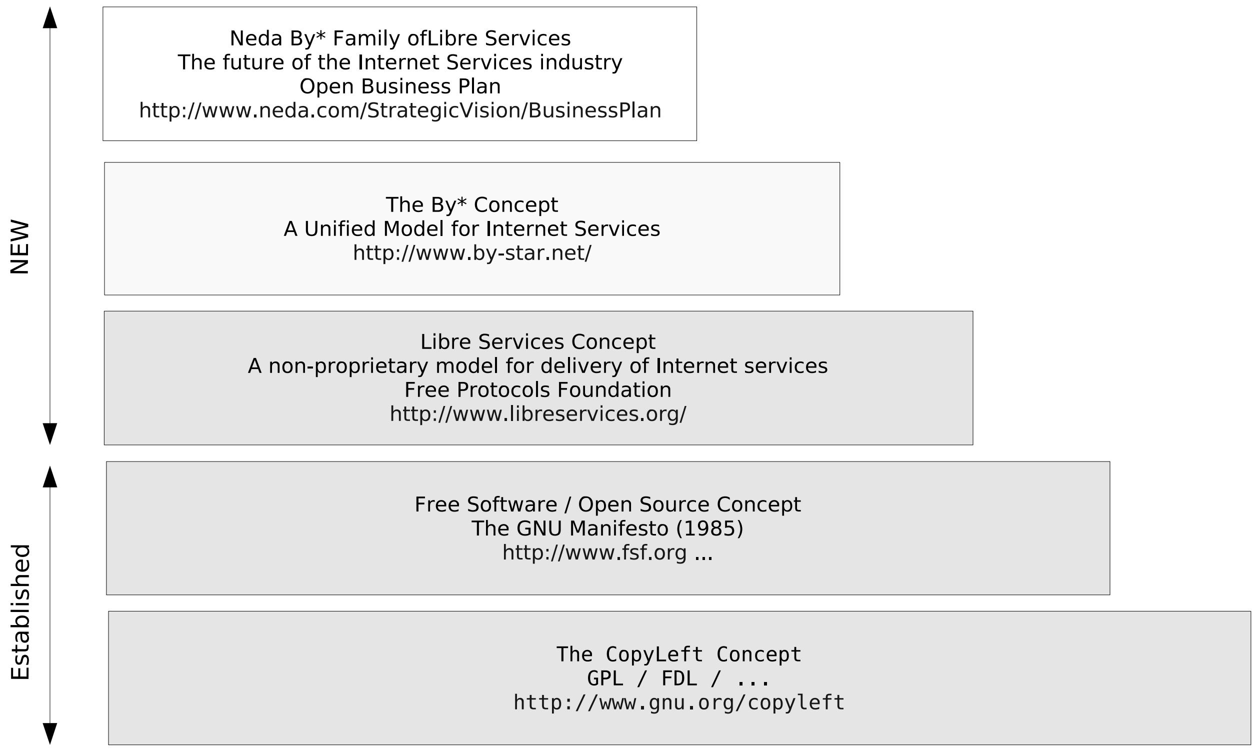

Figure 3: Conceptual Foundations

1.12.1 An invitation

This initiative is not about a conventional product or service. It is about the reinvention of the global Internet Services industry, on the basis of a radical new services model. It is about leadership, and capitalization on that leadership in business terms. It promises to be exciting, and rewarding, in the execution.

We have created a gigantic opportunity, and with the right participation we can turn this opportunity into gigantic revenues. And to enable such participation we have established a comprehensive framework for participation; details are provided in Section 5, “Framework for Participation.” In particular we have ample equity available to motivate participation by team members, partners and investors. In the case of investment participation, our financing model is described in Section 13, “Financing.”

If you are interested in taking part in this venture, then please read on. And if not then please feel free to pass our Open Business Plan along to any other interested person.

1.13 Conceptual foundations

This business plan is built on top of, and requires understanding of, a number of important underlying concepts. Figure 3 shows the full conceptual foundation for the plan.

Each component in the figure represents a conceptual layer, with each layer building on those beneath. The bottommost layer represents the concept of Copyleft, a key enabling principle for the new ideas of non-material capitalism in the digital era. In the context of the software industry, Copyleft is manifested in the form of the Free Software Movement, shown as the second layer in the stack. Thus free software can be viewed as a special case of the more general idea of Copyleft. The principles of Copyleft and Free Software are well established and understood throughout the industry at this time.

But the three topmost layers are entirely new. These represent the three major conceptual components of this initiative.

As we have discussed, Libre Services are an extension of the principles of free software into the services domain. The critical concepts and ideas of Libre Services are thus built on those of free software.

Libre Services is a development and deployment model, but it says nothing about service functionality. The By* layer, built on top of the Libre layer, provides a complete functional services definition. Thus By* is a specific manifestation of the more general Libre concept.

The Libre Services and By* models say nothing about the commercial viablity of any of this, and this brings us to the topmost conceptual layer: the Neda Open Business Plan, describing the deployment of By* in a business context.

Note that each layer in this stack has well-defined public versus private ownership characteristics. The three layers at the bottom—Copyleft, Free Software, and Libre Services—represent communal public resources. These are therefore maintained by non-profit organizations, without any commercial orientation or motivation. In the case of Libre Services the responsible body is the Free Protocols Foundation, which maintains and develops Libre Services as a public resource.

The By* conceptual layer includes both public and private elements. Since the By* services are Libre Services, the entire By* implementation software is a communal public resource, freely available for reuse by anyone. But the By* services themselves, in the form of operational services for end users, are deployed and delivered in a commercial context. Further discussion of the distinction between the technical service implementation software (what we call the Libre Service Engine) and an operationally supported service is provided in *Libre Services: A non-proprietary model for delivery of Internet Services* [**?**].

Finally, Neda is a private business entity, deploying and operating the By* Libre Services in a for-profit commercial context.

1.13.1 Complete documentation

Libre Services and By* are radical new concepts, requiring independent thought to appreciate and understand fully. The basic premise for what we are doing—a non-proprietary, non-ownership model—runs entirely counter to the prevailing business assumptions of the day.

And like any new idea that flies in the face of existing ideas, it takes time and thought to overcome the existing entrenched assumptions, and the limitations of human intellectuality. It takes time for older, arthritic minds to exit, and younger and more adaptable ones to take their place.

But though our services model may be different, it is based on well-founded analysis. And to facilitate understanding of our model by others, we have documented the underlying analysis fully in the form of a comprehensive set of documents called the *Neda Strategic Direction Statement* [**?**]. This set of documents provides a complete description of every aspect of this initiative. In particular, this set includes the following three key documents:

- *Libre Services: A non-proprietary model for delivery of Internet Services* [**?**].
- *The By* Concept: A Unified Model for Internet Services* [**?**].
- This Business Plan.

These three documents mirror the three topmost layers of Figure 3. Together, this triad of documents provides a complete, big-picture view of all the critical elements of this initiative.

1.13.2 An Open Business Plan

These documents are available for readership by anyone. In particular, in what we believe is a first in the history of business practice, we are publishing our business model in the form of an Open Business Plan, intended for widespread distribution, analysis and criticism.

This is highly unorthodox, but essential for the realization of our goals. The deployment of By* at its intended scale cannot be accomplished by Neda or any other company acting alone. Rather this can only succeed as a general industry-wide movement, involving buy-in and participation by many others. In particular this initiative requires the participation of three major consituences: the engineering community, to build the necessary Libre Services infrastructure; the business community, to deploy and deliver Libre Services to end-users; and the investment community, to finance engineering and business development. All these prospective participants need to understand the model in its entirety, including its business dimensions.

1.14 Summary of references and pointers

This Business Plan is the topmost element of a very large construct. Furthermore this is a highly dynamic initiative, and will continue to evolve over time. This presents a dual challenge to the reader: to understand this sophisticated construct as it exists today, and to track its progress in the future.

But everything we do is completely transparent, open to independent examination and verification by anyone. In this section we provide a complete set of references to the many documents, websites and services that make up this construct. Anyone can determine the exact status of any part of this construct by examining these references, now or at any future time. We invite any interested person to look through these materials and verify that we have indeed built what we say we have built.

This business plan is a snapshot at a particular point in time, providing a high-level overview of things as they exist today. But as things move forward it is the websites themselves that represent the definitive point of reference.

1.14.1 Libre Services

- *Libre Services: A non-proprietary model for delivery of Internet Services* [**?**]. Provides a complete description of the Libre Services model.

http://www.libreservices.org/libreManifesto

- *Libre Services: Projects for bootstrapping* [**?**]. Describes the project-based collaborative model and current Libre Services projects.
  http://www.libreservices.org/libreManifesto
- **The Libre Forum**. The central location and resource center for collaborative development of Libre Services.
  http://www.LibreServices.org
- **Free Protocols Foundation**. An independent public forum dedicated to the promotion and support of patent-free protocols, software, and services.
  http://www.FreeProtocols.org

1.14.2 By* concept

- *The By* Concept: A Unified Model for Internet Services* [**?**]. Provides a complete description of the By* model.
  http://www.by-star.org/docs/ByStarConcept
- **By-Star.net**. The central information site for By* services.
  http://www.by-star.net
- **BySource.org**. The distribution center for all By* software in source form.
  http://www.BySource.org
- **ByBinary.org**. The distribution center for all By* software in binary form.
  http://www.ByBinary.org

1.14.3 By* services

Individuals

- **ByName**. A complete set of Internet services for the individual user.
  http://www.ByName.net (fully supported)
  http://www.ByName.com (no-cost service)
  mohsen.1.banan.byname.net (example instance)
- **ByNumber**. Provides access to By* service functionality based on a numerical ID assigned to the user.
  http://www.ByNumber.net (fully supported)
  http://www.ByNumber.com (no-cost service)
  20000.ByNumber.net (example instance)
- **ByAlias**. Similar to ByName, but based on an alias instead of the user's real name.
  http://www.ByAlias.net (fully supported)
  http://www.ByAlias.com (no-cost service)
  nemesis.ByAlias.com (example instance)

- **ByFamily**. Services for individuals in a family context.
  http://www.ByFamily.net
- **ByMemory**. Services for preserving the memory of deceased persons.
  http://www.ByMemory.net (fully supported)
  http://www.ByMemory.com (no-cost service)
  yazdan.1.banan.ByMemory.net (example instance)

Small & Medium Businesses

- **BySMB/ForSMB**. Services for small-to-medium businesses.
  http://www.BySMB.com
  www.Neda.BySMB.com (example instance)
  www.Neda.com (example instance)

Social Networks

- **ByWhere**. Services relating to physical locations.
  http://www.ByWhere.net
  info.1-98008-5807-10.ByWhere.net (example instance)
- **ByEvent**. Services relating to events.
  http://www.ByEvent.com
- **ByTopic**. Services for publication of information organized by topic and words.
  http://www.ByTopic.net
- **ByLookup**. Services enabling word oriented searches.
  http://www.ByLookup.net
- **ByInteraction**. Services enabling transactions involving persons, businesses, places and things.
  http://www.ByInteraction.com
- **ByHookup**. Services enabling connections between Individuals.
  http://www.ByHookup.net

1.14.4 Neda Communications, Inc.

- **Neda: the company**. Comprehensive company information is available on our website at:
  http://www.neda.com
- **Neda: the team**. Biographical information for Neda team members is available at:
  http://www.neda.com/AboutNeda/CompanyProfile/
- *Neda Strategic Direction Statement* [**?**]. A comprehensive package of documents providing a complete description of every aspect of this initiative.
  http://www.neda.com/StrategicVision/ByStarLibreServicesStrategy

- *The By* Family of Libre Services for Network Service Providers: A strategy for rapid entry into the Internet Application Services market* [**?**]. Describes our strategy for rapid population of the By* services by mass creation of user accounts for large existing user bases.
  http://www.neda.com/PLPC/110005

- **Data Center**. We maintain our own Data Center to support the By* deployment.
  http://www.neda.com/InternetServices/OurDataCenter/
  http://www.LibreCenter.net

1.14.5 Investment model

- **Investment Philosophy**. A description of our investment philosophy is available at:
  http://www.neda.com/StrategicVision/Participating/

- **Open Investment Model**. A description of our Open Investment Model is available at:
  http://www.neda.com/StrategicVision/Participating/

- **Due diligence**. A set of resources to assist investors in conducting due diligence is available at:
  http://www.neda.com/StrategicVision/Participating/

1.14.6 Neda-developed Libre software

- *Neda Libre Services Integration Platform (Neda-LSIP) Design and Implementation Notes* [**?**]. Provides an overview and engineering description of the Neda Libre Services Integration Platform (Neda-LSIP).
  http://www.neda.com/PLPC/110501

- *ByEntity Libre Engine Design and Implementation Notes* [**?**]. Provides an overview and engineering description of the ByEntity Libre Service Engine—the technical service implementation software for the By* services.
  http://www.neda.com/PLPC/110502

1.14.7 WhiteBerry mobile messaging

- **WhiteBerry business plan**. The Q4 2001, WhiteBerry-centric Business Plan.
  http://www.neda.com/StrategicVision/BusinessPlan

- *Operation WhiteBerry: Creation of a Truly Open Mobile Messaging Solution* [**?**][**?**]. Provides a complete description of the WhiteBerry mobile messaging solution.
  http://www.mailmeanywhere.org/wbResource

- **MailMeAnywhere.org**. The WhiteBerry software distribution center.
  http://www.MailMeAnywhere.org

- **The Leap Forum**. The central information and resource center for the LEAP family of protocols.
  http://www.LeapForum.org

- **ESRO.org**. The maintenance organization and development forum for the ESRO protocol. http://www.ESRO.org
- **EMSD.org**. The maintenance organization and development forum for the EMSD protocol. http://www.EMSD.org