

# TELECOMMUNICATIONS SERVICE DEVELOPMENT THROUGH SCENARIO PLANNING APPROACH

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## ABSTRACT

In this paper, a Scenario Planning approach was used to identify a strategy to provide Phoneweb based Interactive Voice Response (IVR) service to small businesses. A business case analysis showed that the project is very promising with multiple million dollar profit after tax for a two year view. Little downside risk was anticipated due to no substantial capital investment and no serious regulatory risk. Phoneweb service can be a valuable vehicle for AT&T not only as a revenue generating opportunity from hosting web sites but also as an effective bundling package to retain and winback small business customers.

## 1. INTRODUCTION

Development of telecommunications services is very demanding because of the uncertainties embedded in the business, regulatory and technical environments. These uncertainties need to be managed rather than avoided. Scenario planning helps to identify the driving forces behind the uncertainties and to manage them effectively. In this paper, strategies for telecommunications service were identified through the *Scenario Planning* approach.

Phoneweb service initiated by AT&T can provide an Interactive Voice Response (IVR) system for small businesses which would not only lower their operating cost but increase their sales through better customer service. The Phoneweb concept was built on the idea that easily customizable telephone services can be created with web-like architecture. With Phoneweb service, users can create services that interact with the same data whether the end user device is a computer or a telephone. An IVR application is not hampered by the limitations of the telephone device, although it would be limited for broader Web access functionality.

In our analysis, 4 scenarios and 5 market segment strategies were identified and summarized with driving forces related to the Phoneweb service. 5 potential market segment strategies were evaluated for 4 scenarios through the *Opportunity Matrix* to see which played the best over the potential scenarios. As a result of the analysis, the strategy "Small Business" was selected for further consideration in the *Business Case Analysis Process*. The detailed business case analysis is available [1].

## 2. SCENARIO PLANNING APPROACH

Scenario planning has its beginnings in military

applications, and it was Herman Kahn who has been attributed with bringing the methodology to the business world through his associations with the RAND Corporation and later the Hudson Institute. Kahn's book *The Year 2000* published in 1967 is generally considered the seminal work on scenario thinking. Throughout the late 1960's scenario planning took off in the corporate world. One of the most well documented applications of scenario planning was at Royal Dutch/Shell Group. Pierre Wack wrote about the development of the scenario planning technique at Royal Dutch/Shell in two *Harvard Business Review* articles [2][4]. By providing a framework for constructing a flexible and dynamic worldview, Shell was able to make significant process in adapting to a changing business environment. Wack used scenario planning to broaden the perspective of key decision makers and as an effective communication vehicle for disseminating new thinking throughout the organization. Wack and his colleagues consider the scenario technique central to Shell's success in the 1970's and 80's.

The scenario planning methodology typically follows a fairly rigorous process. However, unlike traditional forecasting, uncertainty is not pushed aside in the quest for a single "correct" answer. Instead of ignoring or reasoning away uncertainty, the scenario planning methodology looks to understand the driving forces behind the uncertainties [4]. The scenario planning approach recognizes that uncertainty can be managed by first understanding the future is not completely uncertain. Some aspects of the future are known. By separating the known, or predetermined elements, from the uncertainty the first steps are taken toward making the decision-making process more manageable. Next, it is important to begin to understand how uncertainties shape and impact existing perspectives of the business environment. The most critical and important uncertainties can be used to broaden the existing perspectives by developing plausible, yet alternative views, based on how the potential outcome of the critical uncertainties. As these alternative views are communicated, decision-makers are given a broader platform on which to evaluate pending decisions. The broad and divergent nature of these alternative views helps to prevent the decision-maker from being blindsided by unanticipated changes in the business environment. The scenario planning approach also helps to stretch and expand the preconceived views of the

future that can persist in well-established and entrenched corporations. As uncertainty becomes more and more a part of the business environment, tools such as scenario planning will be employed to help manage uncertainty and aid managers in making informed decisions.

### 3. PHONEWEB FOR SURFING WEB WITH TELEPHONE INTERFACE

The intended use of the Phoneweb service is to provide an Interactive Voice Response (IVR) system for small businesses which would not only lower their operating cost but increase their sales through better customer service (e.g., 7 days/week  $\times$  24 hours/day). Historically, because of the substantial commitment in hardware and software, small companies often could not afford such a system. However, the Phoneweb technology will make it possible to provide a cheaper alternative to conventional IVR systems.

The traditional way of accessing and distributing information on the World Wide Web (WWW) is through HyperText Markup Language (HTML) documents. However, access to the WWW and HTML documents requires a computer which is not always readily available. Since telephones are often convenient and more available than computers, WWW access via the telephone may be a more ubiquitous alternative. Phone Markup Language (PML) which is an extension of HTML, and its interpreter allows access to the Internet through ordinary touch-tone telephones [3]. Telephone access may make it easy to bill the customers taking advantage of current AT&T billing channels. However, compared with computer access to the WWW and HTML documents, telephone-based access has its limitations in terms of accessing information. It is intended to serve as a lower cost alternative to conventional IVR systems.

The Phoneweb concept was built about the idea that easily customizable telephone services can be created with web-like architecture. With Phoneweb service, users can create services with the same data whether the end user device is a computer or a telephone. When customers call a small business, the web pages are interpreted by the PML interpreter in the network and execute IVR functions such as call transfer, messaging, text-to-speech, voice mail. The value to the small business is that they may be able to lower their operating costs and/or increase their sales by more extensive and efficient customer care.

### 4. SCENARIO DEVELOPMENT

Because the future is uncertain, it is unrealistic to attempt to predict it with any degree of assurance. However it is equally unrealistic to ignore the future and not prepare for its impact. Scenario thinking is a methodology that allows one to explore multiple futures thereby equipping decision makers with the ability to react nimbly to the unfolding future.

In order to explore the possible futures for

Phoneweb, a Scenario Delta Chart was developed with three key nodes and four distinct scenarios. The three key nodes were REGULATION, TECHNOLOGY, and COMPETITION. Along each scenario path, plausible events were described that could direct the future down a given path. If we first explore the regulatory climate following the node REGULATION, the major issue is a possible FCC regulation which would require an access charge for data transmissions of Internet traffic. Along that line, we felt that there were three broad directions which could occur.

First, FCC rules to change access charges on data and the Internet is no longer viewed as essentially free. We call this scenario *Scenario 1: Intranet Dominance*. In this scenario, the lack of traffic on the Internet leads to the decrease of advertising revenues and public surfing of the Web drops off drastically. As a result, commercial advertisers radically scale back their operations, and the Internet as a public forum languishes. At the same time, businesses have seen the value of distributed computing and private Intranets thrive. Phoneweb could be a tool for providing access to these private business owned networks.

Second, if pending legislation acts as a looming cloud of indecision, the Web growth would stall. The migration of commercial business to the Web would drop and the demand for Web authoring tools would also drop. The only growth that the Web would experience is in personal home pages. In this scenario, the Phoneweb service is able to provide an alternative access to these personal Web pages. We call this scenario *Scenario 2: Cyberchaos*.

Third, if there is no regulatory movement for data access charge, The Web would continue to grow. This "Stable regulatory environment" path will be further explored later in terms of *Technology* and *Competition* dimensions. The node, *Technology*, was explored in the stable regulatory environment. Two additional scenarios, Scenario 3 and 4, were developed for this node. *Scenario 3: Hypercompetition* explores the case where large technological improvements are not realized and IVR systems are essentially viewed as a cost savings item. We chose to also fold into this scenario a more aggressive competitive environment. In this scenario, a large, well-financed competitor (e.g., Microsoft) as opposed to a smaller and weaker player (e.g., NetPhonics) enters the market. AT&T Phoneweb service would target small companies with IVR needs, but who lack the financial strength and/or technical expertise to acquire such a system. On the other hand, *Scenario 4: PML Popularity* explored a world where researchers realized vast improvements in current IVR technology. For example, feature rich audio could be added to an existing Web site for easy and convenient access via the ubiquitous telephone. In this world, NetPhonics Web-On-Call product would gain market acceptance and serve as a pioneer for AT&T's Phoneweb. This, coupled with

continued explosive growth of the Internet, results in tremendous business opportunities. Web authoring tools (e.g., MS Frontpage and Adobe's PageMill) provide a means of incorporating Phoneweb applications into their software packages.

The four scenarios can be summarized as shown in Table 1. Note that the Preference/Likelihood in Table 1 is assessed from the AT&T corporate point of view.

Table 1: Summary of 4 scenarios

Scenarios	Trigger Event	Preference/Likelihood	Regulation	Technology	Competition
Scenario 1: <i>Intranet Dominance</i>	Access Charge	Least preferred	Access Charge	N/A	N/A
Scenario 2: <i>Cyberchaos</i>	Regulation Uncertainty	Least likely	Great Uncertainty	N/A	N/A
Scenario 3: <i>Hypercompetition</i>	Intense Competition	Most likely	Stable	Marginal Progress	High
Scenario 4: <i>PML Popularity</i>	Technology Breakthrough	Most preferred	Stable	Great Progress	Medium

## 5. MARKET STRATEGY GENERATION

The Phoneweb service is best suited to a market which needs an easy and inexpensive Interactive Voice Response (IVR) service. The driving force analysis and the scenario development exercise led to the formation of four different marketing segmentations. The four market segments were identified and labeled as follows: *Larger business with existing web pages*, *Creative friends*, *Small business without web access*, and *Captive Intranet applications*.

### 5.1 Market segmentation

The description and the potential motivation of each market segment is as follows:

#### *Larger business with existing web pages:*

This market segment is larger commercial business with existing experience in working with Web applications. In general, they would be the companies with existing web pages and potentially a separate Interactive Voice Response system (IVR) for customer service and/or order fulfillment.

#### *Creative friends:*

The second market segment we examined was characterized by people in the general public who had a need for creative expression. This market segment is analogous to the early adopters of the World Wide Web, who, enabled by the development of HTML, set out to populate the Web with innovative and entertaining homepages.

#### *Small business:*

This market segment is targeting small businesses that may have needs for a web presence and/or IVR applications but require a more cost effective means of satisfying their needs. The customers in this market segment would be characterized by smaller local companies that have strong customer service needs currently met through conventional customer care lines.

#### *Captive intranet:*

The final market segment we examined was the users of captive intra-company networks (e.g., Intranet)

### 5.2 Opportunity Matrix

In fact, the four market segments can be viewed also as marketing strategies. In other words, the purpose of performing market segmentation can be viewed as the process of finding the best market segment to serve to maximize the corporate objectives. In that sense, we included "Do Nothing" strategy as a possible strategy after identifying 4 market segments to serve.

Then, we mapped the scenarios across the 5 market segments ranking the potential success of each one of the strategies in each of the scenarios. That is, for each scenario, we ranked 5 market segments or strategies in the descending order assessing which market segment or strategy would be most successful. Therefore, 1 means that the market segment will perform the best under the specific scenario and 5 means the worst. However, note that the ranking is based on the perspective from the industry in general and not from the perspective of AT&T. The results of the mapping are shown in Table 2. We termed the mapping *Opportunity Matrix*.

Table 2: Opportunity Matrix

Market Strategy Scenario	Larger Business w/ Existing Web Pages	Creative Friends	Small Business	Intranet	Do Nothing
Scenario 1 (Intranet Dominance)	N/A	N/A	N/A	1	2
Scenario 2 (Cyberchaos)	4	1	2	3	5
Scenario 3 (Hypercompetition)	2	3	1	4	5
Scenario 4 (PML Popularity)	1	3	2	4	5
Overall Attractiveness	Medium to High	Medium	High	Medium to Low	Low

From Table 2, it appears that the "Small Business" market segment is the most robust across the four scenarios. Note that Table 2 is assessed from the industry perspective. Also, "Larger Business with Existing Web Pages" market segment looks to be promising except under Scenario 2. However, the remaining three market segments seem to be less promising. "Creative Friends" market plays out well only under Scenario 2 where Cyberchaos is expected, the demand for commercial applications drops, and personal homepages become popular. Also "Intranet" market does well only under Scenario 1 where the Internet becomes more expensive and it loses power as a public forum. Finally, "Do Nothing" strategy is the least preferred strategy under any scenario because potentially attractive opportunities would be lost in this new market under any scenario.

As described before, Table 2 is assessed from the industry perspective. Because of the different competitive advantages each company has and strategic directions each company takes, potential from the industry perspective does not translate into potential from the AT&T perspective. Therefore, understanding the economic opportunities and the possible players and/or partners from the company's perspective is necessary.

From further analysis, it was identified that AT&T has advantages in two market segments: Business with Existing Web Pages and Small Business. Note that the two market segments were also assessed to be promising segments in Table 2 from the industry perspective.

However, the "Business with Existing Web Pages" market segment was excluded for further consideration. The major reason was that we doubted there would be a large market. The rationale for this assessment is as follows. First, at this time, text to speech (TTS) technology is not robust enough for existing big companies to move from the conventional IVR system to Phoneweb based IVR service. Technically, there would be a degradation in service, rather than a benefit. Second, many have already invested in IVR systems, so they wouldn't save money by switching to Phoneweb based IVR service. A more detailed business case analysis was done for the strategy of providing the Phoneweb based IVR service to the small business market segment [1].

## 6. CONCLUSION

In this paper, a strategy of providing Phoneweb based IVR service to the small business market segment was identified. The strategy was identified as the result of an extensive analysis which investigated four potential scenarios and four potential market segments, economic opportunities and partners. The strategy was further analyzed to assess the economic feasibility of the service.

A business case analysis showed that this project is promising with revenues from hosting and network usage and without considering other potential revenue generating effects. Also, there was little serious downside risk involved (no substantial capital investment and no serious regulatory risk). From this project, it was expected multiple million dollar profit after tax for two years time frame. In addition, the possible regulation for the data access charge turned out not to be significant variable in this study. Therefore, there is limited impact of the regulatory conditions which was not clear in the early stage of the analysis. In conclusion, the Phoneweb service were considered as a valuable vehicle not only as a revenue generating opportunity from hosting web sites but as an effective bundling package to retain and winback commercial market customers. In the whole process for developing Phoneweb based IVR services, the scenario planning approach was useful to focus on potential strategies. The uncertainties relevant to the service provision was identified and explicitly considered for their management through the approach.

## 7. REFERENCES

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