

## CUSTOMER MANAGEMENT SOLUTIONS FOR DOCSIS

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### Abstract

*Operators, hardware vendors and billing companies are actively developing provisioning solutions to compliment the value of DOCSIS interoperable platforms. The value of this development will be realized in the form of reduced overhead support costs and higher penetration rates. Cable operators that include the necessary provisioning applications in preemption of DOCSIS will have the means to extract the value from this standardization. Those that do not address this issue will be faced with delivery and service problems that will diminish penetration rates and subsequent revenues.*

### INTRODUCTION

As cable companies continue to evaluate business and implementation strategies for the upcoming Data Over Cable Service Interface Specification (DOCSIS), it is clear that the companies which will realize the greatest market opportunity and highest penetration levels are those that can provide the most diverse services to the subscriber. Typically, this value proposition is correlated with local and national content, pricing strategies and quality of service. Given the advent of DOCSIS and the eventual retail availability of cable modems, this value proposition must include a viable Customer Management solution that will streamline

customer registration and empower the subscriber to utilize a wide array of products and services. As such, a Customer Management solution can not be viewed simply as billing application, but as a means to reduce costs and increase profitability.

Even though a paradigm shift has not occurred in the market, it is a foregone conclusion that all service providers will be faced with new market competition, whether from ISPs, DSL or wireless providers that will offer high-speed access services which include end to end provisioning solutions. When faced with this scenario, cable companies will be competing on an uneven playing field that will result in lower penetration rates and revenues. Clearly, a cable modem will offer a higher level of service than most competing services, but for many consumers, convenience and simplicity of service activation will be the deciding factor in selecting an IP service provider. If given the choice between a service that takes two weeks or more for installation and one that offers self-registration, the shortest path to service activation will generally be chosen.

The interoperability standard set forth by DOCSIS does provide an economic model that will benefit both the cable operator and subscriber through the retail availability of cable modems. This will effectively reduce the consumer price levels of the cable modems, but it does not solve the problem of remote

activation and provisioning of cable modems. Eliminating the price barriers associated with cable modems will be a significant step in driving penetration, but the next critical step in this process is developing the back-off systems and interfaces that will simplify customer activation, provide up-sell potential to new services and maximize market penetration. As the competitive market continues to migrate to creative services, such as VoIP, Customer Management solutions will play a more significant role in customer acquisition, retention and revenue.

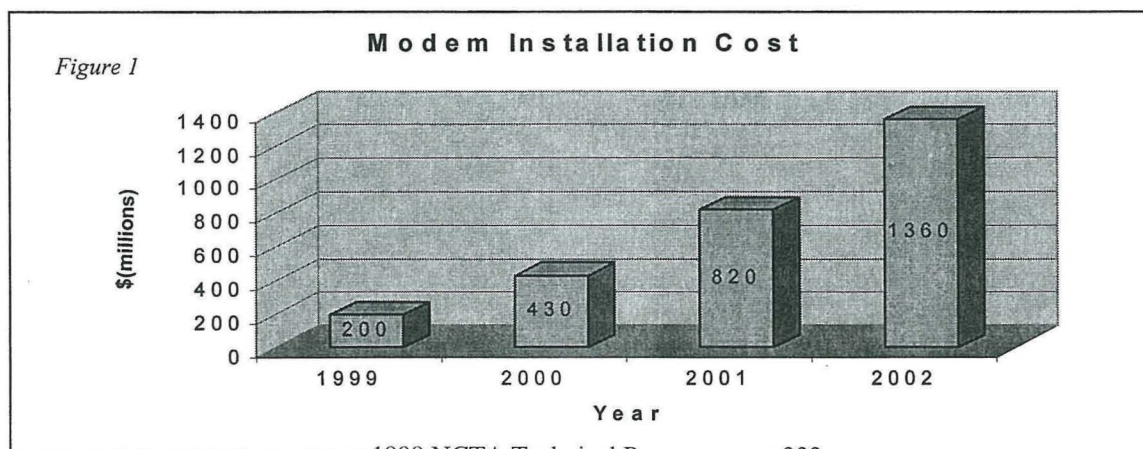
## **COST TO SERVE**

### **Market Statistics and Risk**

Depending on which study you read, it is generally accepted that cable modems will be highly successful in capturing IP market share. By some estimates, such as those found in the Forrester Report, it is speculated that over 10 million cable modems will be installed by the year 2002.<sup>1</sup> DOCSIS and the retail deployment strategy will facilitate this astounding growth, but this is based on the assumption that downward pressures on price, including access rates and equipment costs, will dictate penetration rates. Nevertheless, it must be stated that the greatest risk to the future success of

cable modem service will be the inability of a cable operator to satisfy market demand. If cable modems do saturate the market, the single most important variable cost that is not factored in this equation is the expense of service activation and 'truck rolls' that are necessary elements in the current process. Even though this cost is in many cases passed on to the consumer, the future competitive environment may eliminate this option.

For any given cable system that is offering a high-speed data service, frequent 'truck rolls' to either upgrade a subscribers coaxial plant, install an Ethernet card or simply provide cable modem activation is, and will continue to be commonplace. For purposes of this paper, it is assumed that the average cost per truck roll is approximately \$100. Given this conservative cost estimate, the total aggregate overhead costs associated with cable modem activation by the year 2002 could exceed \$1.3 billion. If the end to end work flow were to be added to this estimate, including calls to a Customer Service Telephone Center to initiate a work order for new service, a more realistic cost estimate would be at least \$1.5 billion. *Figure 1* provides an overview of this analysis.





Aside from the overhead cost estimates associated with 'truck rolls' and Customer Service intervention, a secondary issue that cannot be ignored is the availability of in-house and third party field technicians to meet market demand. It has been estimated that without a means to provide remote modem provisioning capabilities, that many customers will have to wait weeks for modem installation. If this is the case, many customers will simply search for solutions and services that can be delivered now, and not in weeks or months. Without a viable solution to these issues, many perspective high-speed modem customers will opt for the readily available IP solution, which in many cases could be a competing IP service provider.

## **CUSTOMER MANAGEMENT SOLUTIONS**

### **Overview**

The ideal Customer Management solution is one that will not only minimize human intervention by the cable company, but also one that will provide a fully automated system to properly manage an IP subscriber. This process is dependent on empowering the subscriber to self-manage an account, from the selection of particular modem to the choice of service levels and finally to the payment method.

The current process is one that is driven by manual activities that are neither cost effective or efficient. The challenge that the cable industry is faced with is implementing the necessary systems and provisioning applications that will create a self-managed end to end solution. The deployment of a self-

provisioning solution will not eliminate all of the manual processes. For example, some subscribers could be data-only customers that will require a cable drop and plant upgrades. Nevertheless, the basic goal of a provisioning solution will be to minimize overhead costs, lessen stress on human processes and create additional value to the end-user.

In a DOCSIS environment, the strategy and benefit of this standardization will be to have a variety of interoperable cable modems in retail outlets. As such, the shared vision is that a prospective customer can purchase a cable modem at the retail store, take it home, plug it in the computer, the cable outlet, create a new account and initiate service. Even though this process is not much different than what is currently offered by dial-up IP service providers, it is made more difficult by the wide range of system configurations, interfaces and services that can be offered through a high-speed cable service and mutually exclusive cable systems. Clearly, the intention of the interoperability model is to minimize these differences, but the reality is that the challenges and final solutions will be more complicated than those found in the dial-up world.

An example of these differences can be seen in Figure 2.

Figure 2

### **Dial-Up Registration**

User-Interface for Auto-Registration

Account Creation to include:

Domain Name  
Demographics  
E-mail Account  
Web-Hosting  
Ancillary Services(News)  
Credit Card Verification  
Service Level

Enable/Disable Account

### **Cable Modem Registration**

User-Interface for Auto-Registration

Account Creation to Include:

Domain Name  
Demographics  
E-mail Account  
Web-Hosting  
Ancillary Services(News, VoIP, VOD, et..)  
Credit-Card Verification or Single bill  
for video, data and telephony.  
Service Level (Usage, Flat-Rate)

Cable Modem Registration

Remote Configuration for QoS  
Work Flow  
MAC address acquisition and collection

Enable/Disable Account

### **Provisioning Attributes**

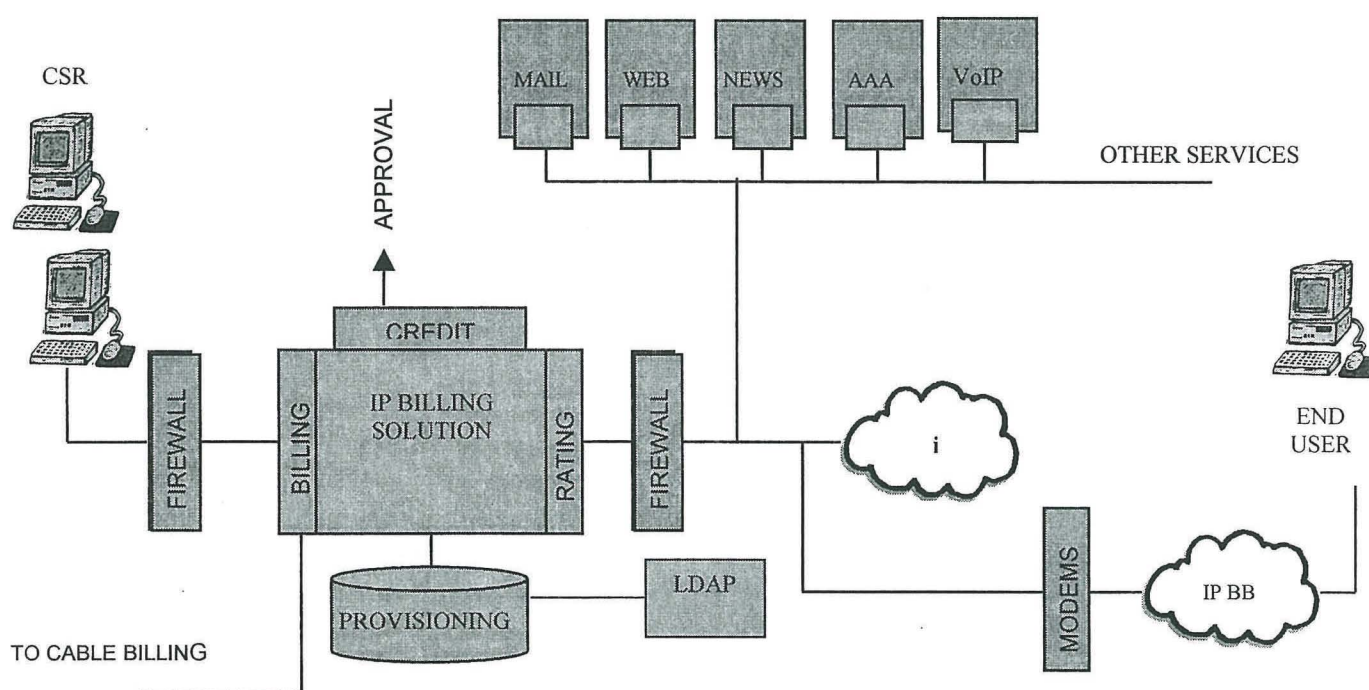
Given the expected proliferation of cable modems in the market, it is clear that the various customer-care and billing companies will be asked to develop and deploy new interfaces, platforms and applications that will facilitate modem provisioning and customer self-management within a cable environment. In the future, a core functional requirement of both the IP service provider and end-user will be a solution, or service, that will deliver the following items:

- ◆ Remote online-modem registration. This will minimize the overhead costs associated with additional technicians and CSRs. Only those subscribers with plant upgrades will require a truck roll.
- ◆ Online bill presentment and Customer self-care modules. This will minimize Customer Service intervention.
- ◆ Interfaces to a DOCSIS certified headend control unit. This will ensure interoperability for new cable modem subscribers, and for those that migrate to other cable systems.
- ◆ Rating capabilities for usage and a wide variety of services. The expectation is that flat-rate billing is not a viable future solution.
- ◆ Interfaces to existing Legacy systems. This will provide congruence and consistency for both the operator and subscriber for billing and new service offerings.
- ◆ Rapid time to market for new services, such as VoIP.



The inclusion of these elements in a service offering will give the cable operator a competitive advantage in the IP market. It provides the flexibility that will be required to capture and retain customers, react to market pressures

and provide a cable modem subscriber the means to self-manage an IP account. The following illustration provides an example of the diverse services, systems and interfaces that would be inclusive in this solution.



## CONCLUSION

By the end of 1999 it can be assumed that multiple provisioning solutions and methodologies will be available for cable operators. The reality is that the value of DOCSIS will not be leveraged until prospective cable modem customers have the ability to 'plug and play'. This fact is well known by the operators, hardware vendors and billing suppliers. As such, it

is imperative that these applications be developed, tested and deployed even before DOCSIS begins to drive cable modem penetration rates.

In recent months the IP industry has seen emergence of several new DSL and wireless IP service offerings targeted at prospective high-speed customers, both residential and commercial. In a sense,

the land-grab has begun and those IP providers that can provide:

- ◆ A rapid time to market for the consumer
- ◆ Autonomy and self-account management.
- ◆ Creative new services as they become available.
- ◆ Greatest value for the money.

The companies that do satisfy these requirements will end up with the largest portion of the property at end of the day. Those IP companies that do not enter the market with these provisioning capabilities, will spend millions of dollars in customer acquisition and retention.

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<sup>1</sup> Forrester Research, Inc., "Broadband Hits Home", August, 1998