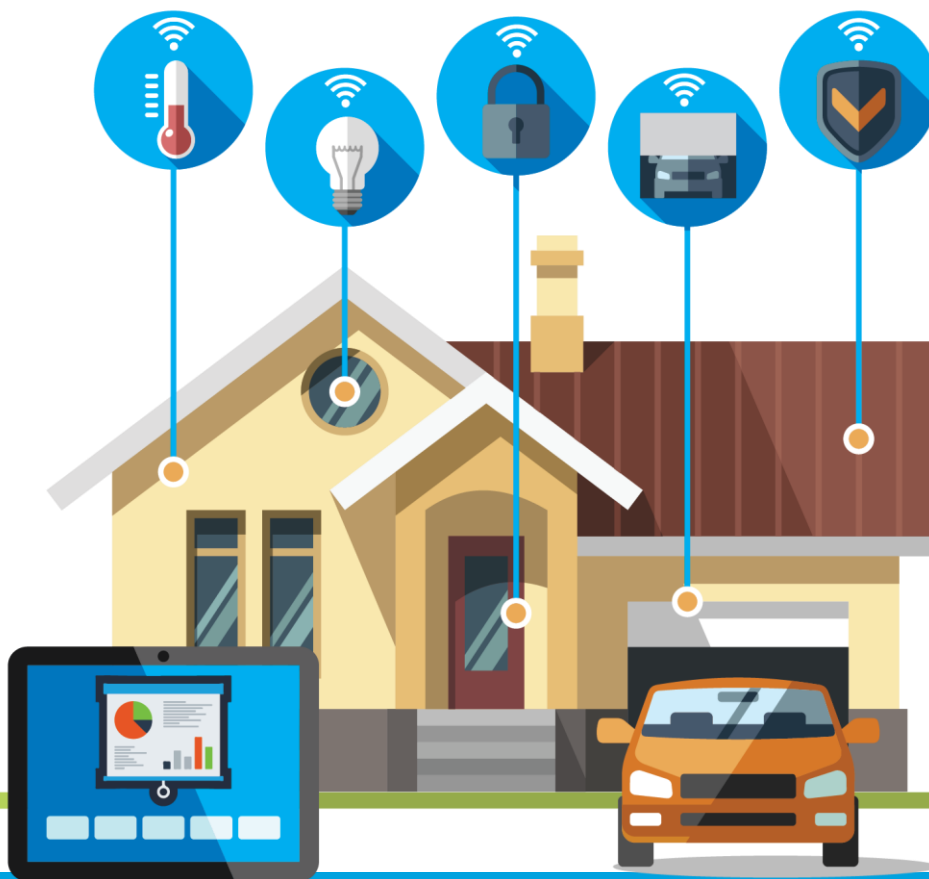


CASE STUDY: SMART HOME SERVICE MAXIMIZE CUSTOMER VALUE THROUGH SMART HOME INSIGHTS

BOOST ENGAGEMENT, INCREASE LIFETIME VALUE



mnubo

mnubo is an Internet of Things (IoT) company, providing Data Analytics solutions for connected Product Manufacturers and Service Providers. mnubo extracts business value from IoT data by delivering out-of-the-box insights and advanced IoT data science. It offers a SaaS solution to connected product manufacturers to ingest, enrich and analyze their object data. mnubo's SaaS offering benefits customers in consumer, enterprise and industrial verticals – and analyzes billions of IoT data points every month. Find out more at www.mnubo.com

© Copyright 2016 mnubo inc. all rights reserved.

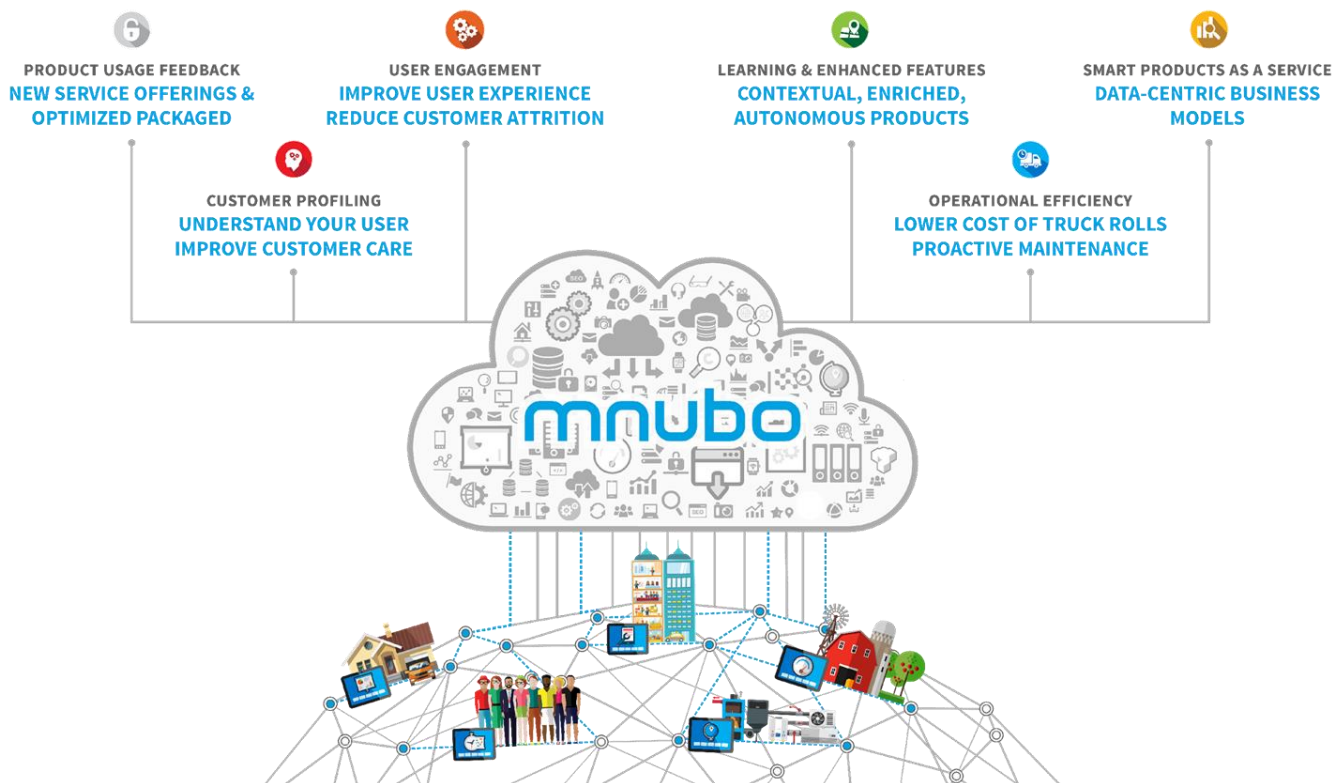
EXECUTIVE SUMMARY

Many multi-play service providers are keen to bring to market a compelling smart home service to: diversify beyond their current offerings and deliver additional consumer value, increase incremental ARPU in a hypercompetitive broadband space and more importantly, build customer stickiness around other services (protect established revenue) – thereby lowering the overall customer attrition.

Strong consumer interest has attracted many new entrants, globally. Broadband service providers, including Comcast, AT&T, Time Warner Cable, Cox, Rogers Communications in North America, Telstra in Australia, iTSCOM in Japan, are all actively selling professionally monitored smart home automation and security systems.

This has created a dynamic environment filled with opportunities and risks for service providers. Many of them are looking at their *smart home usage data insights* to achieve their business goals and overcome the adoption challenges. The end objective is to *maximize customer value*. Here are some key considerations:

- How to deliver a seamless smart home service customer experience?
- How to reduce customer churn and facilitate faster adoption?
- How to lower the operational costs while increasing the quality of customer service?
- How to increase the benefits derived by the home owner and improve ARPU over time?



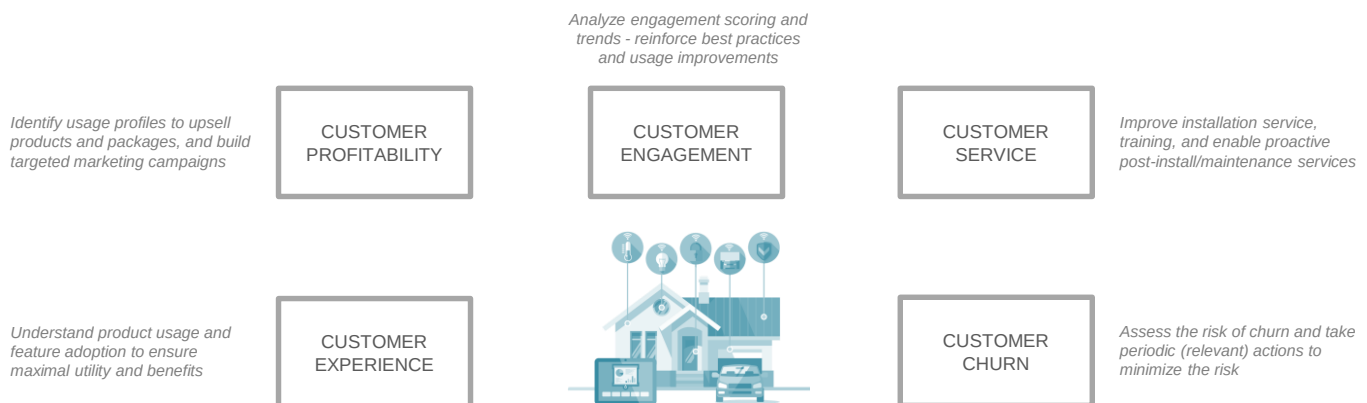
CASE STUDY

LARGE SMART HOME SERVICE PROVIDER

Maximize Customer Value by leveraging Smart Home Insights

SMART HOME AT A TIPPING POINT – HOW TO MOVE BEYOND EARLY ADOPTERS?

One of the key challenges in focus for smart home service providers, involves how to communicate the value proposition. The smart home has multiple use cases of varying value and resonance to different consumers. It is for this reason that the home automation and security industry is an early leader in this space – energy monitoring, elderly care, usage-based insurance and others are amongst the new sub-markets. Automation and security is a mature market, at the brink of the chasm, with a clear, well-understood value proposition that can also serve as an anchor for additional smart home offerings. The same sensor ecosystem that are used to detect break-ins can be managed remotely to turn off lights and control the thermostat – straightforward, right? Not really, even this market is plagued with growing challenges on high customer churn, rising cost of truck rolls, increase in product issues and faults, and mixed feedback on the overall experience and engagement. These facets of customer value are illustrated in the diagram below:



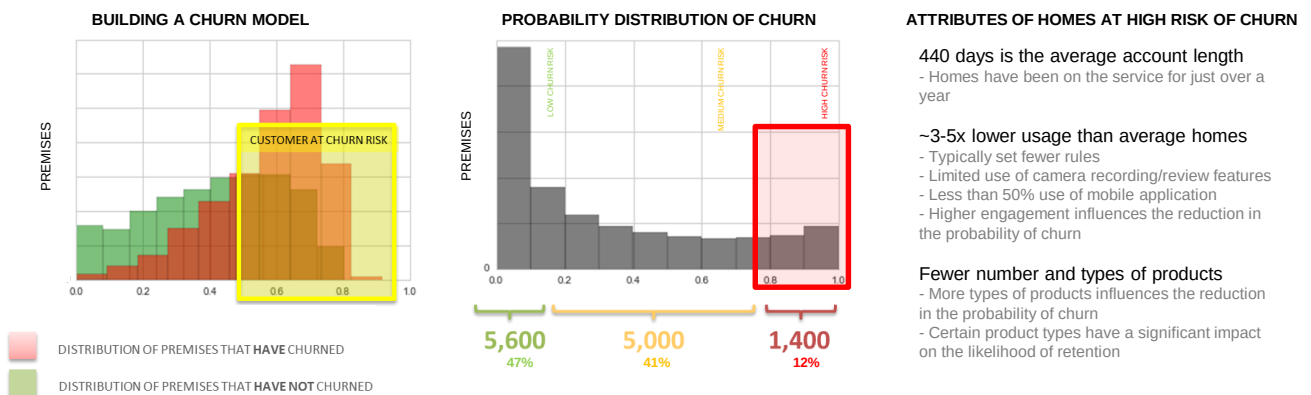
USING SMART HOME INSIGHTS TO INFLUENCE THE FACETS OF CUSTOMER VALUE

One of the reasons for these challenges on customer adoption and attrition is that smart home service providers have not yet successfully tapped into the feedback potential of their smart home data to adapt their value proposition, marketing and services. By gaining insights from analyzing and processing smart home usage and performance events, service providers can better understand: how their install base is actually using their products, where are they experiencing issues, what features are driving adoption and utility, and how are the pre- and post- installation services being managed. This paper will discuss how some of these facets of customer value can be influenced through insights, in particular *customer churn* and *customer service*.

OBJECTIVE 1: REDUCE CUSTOMER CHURN

Customer churn modelling is a complex issue and has been studied by business and marketing experts across multiple service providers. Most models take into account: demographics, credit score, pricing plans, service data and other inputs. But many of these models fail to account for a critical influencer: *actual smart home usage data*. Without understanding how your products are being used by the customer, it is very difficult to infer and influence why they are going to churn. If a customer is not deriving the expected value from the smart home service, he or she is likely to be at a higher risk of churn - this is fundamental driver behind using smart home insights as an input to customer churn analysis. Furthermore, the insights from smart home usage is *actionable* by the service provider – they can take churn reduction measures based on this data.

In the following case study (extract from a real smart home actual smart home data), the smart home service provider has 12,000 smart homes and has a *high monthly churn rate of 725 homes*. The average monthly revenue (AMR) per home was \$40. A churn model was built using a machine learning exercise on the attributes of previously churned homes, taking into account status, service usage and the product package – per home. The resulting model was used to derive a probability distribution analysis to understand the attributes of the existing customers and their risk of churn.

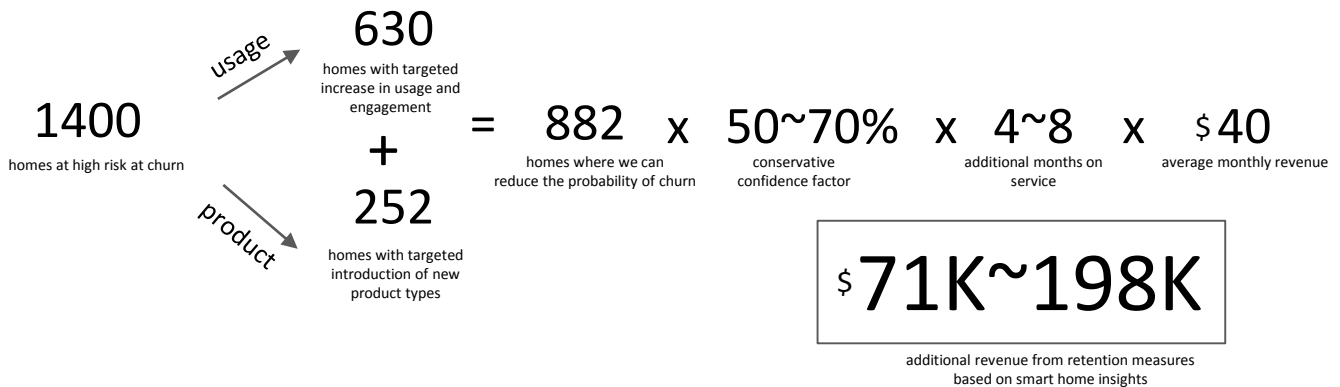


Of the 1400 homes at the high risk of churn (red zone), based on the insights we can take the following retention measures:

- **45%** of the homes could be retained for a longer period by promoting engagement and usage – the type and level of usage can be targeted in clusters of home e.g. 230 homes (16%) have not created new rules, prompt a notification/alert to re-engage
- **18%** of the homes could be retained for a longer period by promoting a more attractive product type e.g. upselling a motion detector to homes which have a glass break sensor, in the initial package, adds ~100 days of retention (on average)

We use a 50-70% confidence factor on these 882 homes (63%) to measure the economic value for service providers if they take the appropriate retention measures.

CALCULATE THE ECONOMIC VALUE FROM CHURN REDUCTION MEASURES



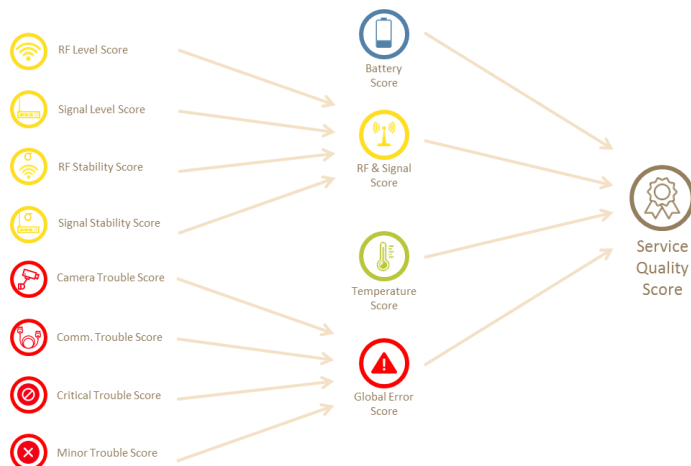
Based on this analysis, similar service providers can take retention measures using their smart home insights to reduce their *current monthly churn rate* between **15.3 to 21.5%** - down from 725 homes to 565-610 homes per month and potentially add between **\$71K to \$198K** of revenues (for the 882 homes) over the period 4-8 month period. The result is an increase in customer lifetime value, reduction in attrition and greater service stickiness.

OBJECTIVE 2: IMPROVE SERVICE QUALITY AND CUSTOMER SERVICE

Another facet of concern for the service providers is the need to deliver a high-quality service from a product operations and a customer service perspective. With regard to a product operation - failing batteries, poor signal levels, high error rates, communication issues result in a frustrating experience for the home owner - these indirectly contribute to customer churn and directly impact the overall customer value. On the customer service side, the service provider lacks visibility on in-field issues such as product failures, replacements and others, and is often reactive with the post-install maintenance and support services.

SERVICE QUALITY SCORE

is a normalized KPI to track, weigh and trend the product operations issues and help the service providers understand the *health* of their smart home install base

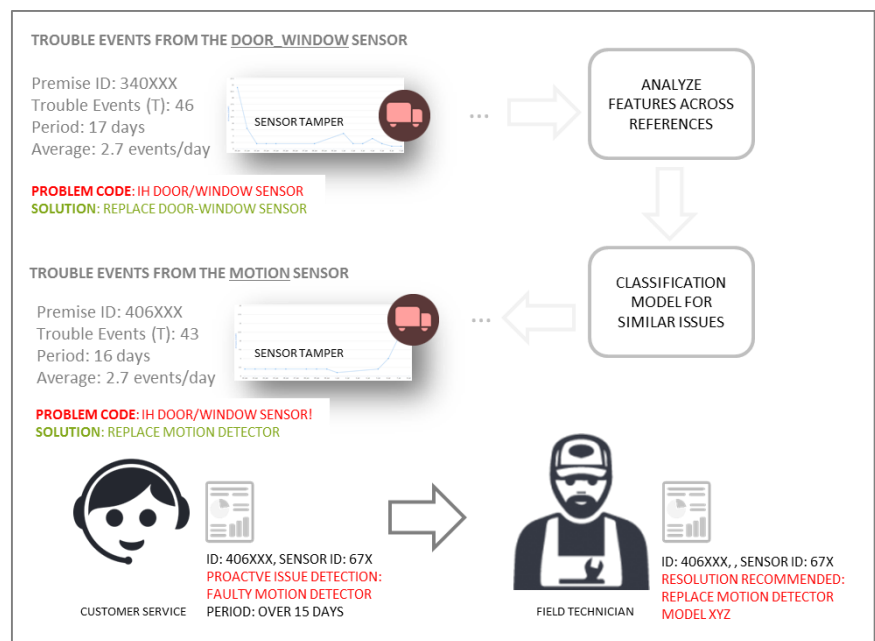


CUSTOMER SERVICE: REDUCE COST OF TRUCK ROLLS

Truck rolls are also a significant operational cost to service providers. Trucks rolls associated with installation are captured under cost of subscriber acquisition; but the post-install truck rolls associated with repair, replacement, reconfiguration and other issues could have a considerable impact on the operating margins of the smart home business line.

In the following case study, the smart home service provider has 12,000 smart homes and has a *monthly average of 60 post-install truck rolls*. Majority of the truck rolls (61%) are associated with repair or replacement reason code. In these cases, the field technician don't have much information on the issue *until* they are in the home – they may not be carrying the right tools or inventory, and frequently the problem described by the customer could be quite different from the actual cause. There are significant inefficiency costs in the overall post-install service chain. By leveraging smart home insights, the customer service team can remotely do a rapid diagnosis of the in-field issue, identify the potential source, and recommend the appropriate action to the home owner or the field technician – these insights can be pushed to the service provider's business systems. This information can help the customer service agent for proactive issue identification and truck roll planning (based on location, severity etc.) and can help the field technician with inventory and resolution planning, reducing time-to-resolve thereby improving the overall customer support experience.

In the example on the right, a issue classification model can be built to identify similar problems based on historic diagnostics data from the install base to enable proactive maintenance services and accelerate time to resolution.



The next edition of the case study will cover the other facets of customer value such as *customer experience*, *customer profitability* and *customer engagement*.