Communications Review / September 2015
Insights for telecom, cable, satellite, and Internet executives

Owning the Connected Home: Customer experience as the ultimate differentiator

Of all the opportunities enabled by the Internet of Things (IoT), one of the most exciting—and most current—is the advent of the Connected Home. The prospect of a "smart home" with solutions such as automated lighting, 24/7 video recording and cloud-based HVAC management has sparked a frenzy of market activity. In the past year, multi-service operators (MSOs), telecommunication companies (telcos), original equipment manufacturers (OEMs), start-ups, and tech heavyweights have all entered the space with competing and complementary offerings. With so many players, how can any one company differentiate itself from the pack and own the home? Which specific strategies should companies adopt to ensure long-term success? Where should Connected Home players look to drive sustainable revenue growth? It turns out that all roads lead to one place: The customer experience.

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The IoT: a new era dawns

By now, you may have heard the lofty predictions about IoT: billions of connected devices, trillions of dollars of revenue to be had, and so on. What's received less focus is the qualitative forecast, or rather, what the IoT looks and feels like.

While the exact future state is unknown, we have already seen that simply replacing light switches, remote controls and door locks with an assortment of "smart" apps isn't going to revolutionize our lives. IoT is more than incremental convenience. It's about anticipation, curation and optimisation.

An IoT powered environment with the capacity to attract user adoption en masse will feature five key characteristics:

1. The user experience will be ***seamless***, with solutions delivering equal experiences across all platforms and smoothly integrating hardware, software, and services.
2. ***Technology will dissolve into background***; users won't know how exactly a particular service works; they'll just know it does.
3. It will be ***omnipresent***, accompanying users everywhere they go and transcending devices and geographies.
4. It ***will connect to everything***—from the house to the car, from domestic appliances to wearable devices, from retail locations to hotels.
5. It will be ***personal***: learning from, adapting to, and continually enhancing the lives of its users.

Many IoT solutions will seek to incorporate these characteristics, but perhaps none will embody them all as holistically and consistently as the Connected Home. It's a proposition that addresses myriad use cases, is supported by today's technologies, understood by customers, and championed by the media. As a result, companies have woken up to its potential and are moving quickly to stake a claim to the market.

A "hyper-disruptive" Connected Home market landscape takes shape

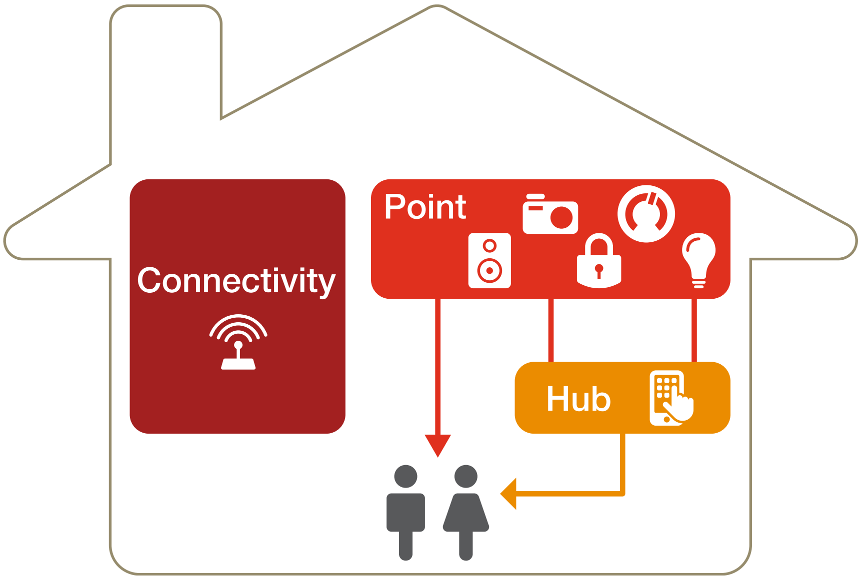
With a wide array of players jostling for position, the emerging Connected Home marketplace is evolving rapidly and disrupting traditionally slow-to-innovate spaces like home appliances (e.g. IoT toasters, fridges and washing machines). Several trends are worth noting:

- **Merger & Acquisition (M&A) activity** is on the rise, as market players acquire one another or merge to strengthen their positions and gain ownership of human capital and technology. Recent examples include Google buying Nest, Nest buying Dropcam and Revolv, and Samsung buying SmartThings.
- **Partnerships/compatibility agreements** are becoming commonplace, mainly between OEMs and service/platform providers. Lutron, iHome, and Elgato recently announced compatibility with Apple's Homekit, for example.
- **New players**—many established companies are diversifying their product lines and entering the marketplace for the first time. Examples include Comcast's Xfinity Home, Amazon's Echo and Dash, Kwikset's Smart Locks, AT&T Digital Life, and ADT Pulse.
- **Widely varying products and services** are flooding the market, as each company attempts to gain market share by leveraging its core competency. The main groups of participants and offerings are:
  - *OEMs* using their product and design expertise to offer *devices* such as smart cameras and thermostats.
  - *Technology firms* playing in the *software and infrastructure* space, through offerings such as iControl Networks' Touchstone and Converge platforms.
  - *MSOs and telcos* bundling *managed connected home services* with traditional 'triple-play' packages, leveraging their large technician and customer service workforces, existing customer relationships, and ability to offer subsidised hardware given their monthly recurring revenue model.

Will one singular player control the Connected Home experience and "own the home"?

Figure 1: Three business models for Connected Home offerings

Connectivity services enable end user interaction with both Point and Hub solutions.



Three standard business models

Looking at the players, products and services in the space, three main business models have emerged (see Figure 1):

1. **Point Solution Model**—in which a company sells an end product/ service used by the customer. Dropcam and Nest are currently among the most popular point solution providers.
2. **Hub Model**—in which a company focuses on connecting and enabling interactions between disparate point solutions while offering customers a singular means of control (i.e. one user interface). The popular mobile application IFTTT (If This Then That) has found itself in various "Top Apps" lists by designing a Hub solution that enables users to set up triggers in one application based on events in another.
3. **Connectivity Model**—in which a company offers network connectivity that enables communication between point solutions, hubs, and consumers. This model is primarily used by MSO and telcos, prime examples including Telefónica and Time Warner Cable.

Several questions dominate the horizon…

As companies increasingly seek to gain market share using one or more of these three business models, several pivotal questions remain. Will one singular player control the Connected Home experience and "own the home"? If not, how many companies can share in that "home ownership"? What are the benefits and risks of each business model? How can companies position themselves to achieve long-term revenue growth? And what factors could make or break a business in this market?

…with one answer: the customer

The answer is simple, it all comes back to the customer—a notion that's repeatedly enabled tiny start-ups to transform into dominant market players. Apple seized the mobile phone market by blending hardware, software, and services into one simple, intuitive, and fluid customer experience. Netflix toppled the movie rental industry by offering customers a more flexible and on-demand way to watch movies. Uber and Lyft are thriving by giving customers convenient transportation options, disrupting a cab market that had previously been immune from such change.

Similarly, the players that come to dominate the Connected Home will be the ones that focus relentlessly on the customer. Conversely, participants that pay too little attention to the customer—or struggle to keep up with changing customer expectations—will fail. However, the customer strategy will vary based on the participant's business model.

Business model 1: The point solution

Key characteristics

The players in this category can be broadly divided between those providing devices and those providing services/standalone applications.

Devices offered as point solutions include cameras, thermostats, speakers, locks, and light. Services/standalone applications offered as point solutions include apps for weather, video recording, and energy management.

Revenue models vary. Devices usually command a sizable upfront payment with no recurring fees. In contrast, services and standalone apps are usually offered at no upfront cost to the customer, producing revenue via recurring payments and freemium[1] models.

Growth strategy and key risks

The main weakness of point solutions is inherent: their singular application in the customer's home. A thermostat, for example, can only meaningfully affect a customer's interaction with his or her HVAC system. By itself, this focused role doesn't translate well to the creation of a connected, seamless, easy-to-use customer experience across the home, especially for customers who want multiple integrated solutions such as HVAC management, lighting automation, and remote door locking capabilities.

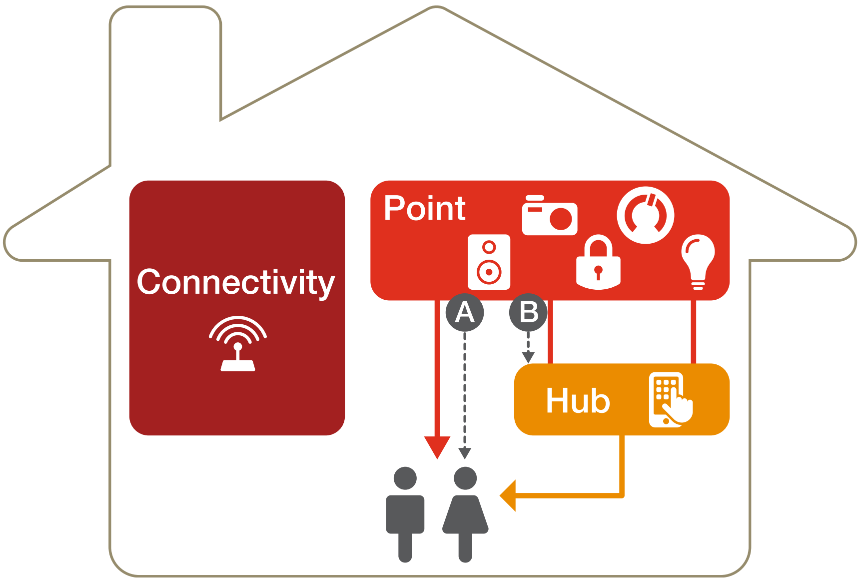
To meet such needs, point solutions must interact with each other via a hub to unlock the real value of the IoT. They can achieve this one of two ways:

- **Directly**, by becoming—or owning—a hub themselves. Nest has taken this approach with its "Works With Nest" programme, which enables the Nest Thermostat to communicate with other point solutions. With this model, the main risk is the focus shift away from a point solution's core competency—the device, service or app itself. Because this approach relies on integrating third party solutions, the original provider could find its brand and value proposition damaged by subpar customer experiences over which it has little control.
- **Indirectly**, by dominating a particular niche or becoming a "must-have" point solution in the minds of customers. This is Kwikset's goal with its smart door locks: with a relatively small number of lock manufacturers in the market, consumer demand for Kwikset's products will compel hubs to offer integration with Kwikset locks to remain competitive. With this approach, the main risk arises from the fact that Connected Home devices are still at an early stage in their lifecycle. When the cost of manufacturing a device or maintaining a service decreases far enough, the offering can become commoditized and ripe for copycats. The danger isn't just being undercut by an overseas manufacturer; other hub providers could sell a similar point solution but provide deeper integration with their own platform, effectively muscling the point solution provider out of the market.

Given these factors, point solutions should consider disrupting their own pricing model. To take an extreme route, if point solutions gave their devices away for free, they could saturate the market and achieve the ubiquity they need. While that option may not be realistic, alternative pricing arrangements could be beneficial for device manufacturers. What if Nest subsidized its thermostats when purchased in conjunction with a partner's hub service, taking a portion of the hub's recurring revenues while lessening the upfront device cost for consumers? With this type of deal, Nest could simultaneously protect itself against competition from other thermostat makers; increase its revenue in the long run; and—most importantly—drive higher customer adoption.

Figure 2: The growth dynamics for point solutions in the Connected Home

Delivering best-in-class experiences directly to the end user (A) and partnering with hubs to offer enhanced functionality (B).



Business model 2: The Hub

Key characteristics

Hubs' core role is to aggregate and connect the data, patterns and experiences delivered by multiple point solutions, while also providing the customer a seamless way to control the home. For customers, value arises from having to go to only one place to control multiple devices. The real value, however, comes from being able to program connected devices to interact with each other, thereby introducing an elementary means of artificial intelligence or automation to the home. A basic example might be the ability to set a rule to turn the lights on when the front door is opened.

The revenue model tends to be similar across all hub offerings. They're generally offered for "free", with no upfront or recurring cost. However, they do have one major future source of revenue: ***data***. Hubs are in a unique position to gather and track all the data passing through the home.

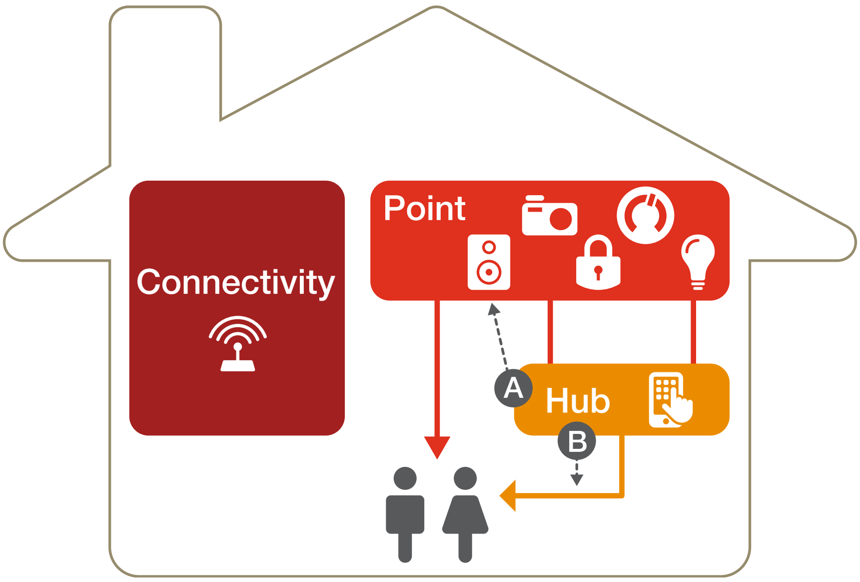
The good news is there are precedents for sustainable revenue models based on data aggregation. Google didn't initially make any money with its search engine, but over time was able to monetise the search data through advertising. Google knew everything its customers were doing on the web—just as hubs know everything customers do in their homes. So, after achieving sufficient ubiquity, hubs can turn to monetisation.

Data Security in the Connected Home

Given hubs' role in collecting and analysing customer behavioural data, one of the clearest risk areas centers around data privacy. The Connected Home takes data to a whole new playing field; never before have companies had such intimate and detailed knowledge of what people physically do in the privacy of their own homes. One slip-up—a hack, a data leak, or any other form of privacy breach—could spell disaster for even the largest and most popular of hubs. For this reason, any company operating a hub business model needs to ensure they have the highest degree of network / system security.

Figure 3: The growth dynamics for hubs in the Connected Home

Aggregating desirable point solutions (A) and delivering a unified best-in-class experience to the end user (B).



Growth strategy and key risks

Like the other business models, hubs need to find and protect connections to the consumer. As Figure 3 illustrates, this requires hubs to achieve two goals simultaneously. The first is to aggregate more point solutions; the second is to continually refine, customize, and differentiate the user experience.

Given the role of a hub solution, it's evident that its primary focus should be incorporating point solutions. As Figure 3 shows, hubs don't provide any value to the consumer without a connection to point solutions; the only value of IFTTT, for example, lies in allowing users to control and interact with other applications.

Hubs shouldn't let their pursuit of point solutions distract from the ultimate key to success: the customer experience.

Thus, hubs need to offer a unique value proposition to persuade point solutions to join them. They can, for example, provide software development kits (SDKs) to facilitate development on their platform, or purchase point solutions flat out. Revenue-sharing models can also help attract willing partners. But perhaps the most powerful incentive that hubs can offer to point solutions is a sizable, engaged user base. Comcast's Xfinity Home, for example, recently opened up its ecosystem to a wave of third-party point solutions after publicly announcing a user base of 500,000 subscribers.

However, hubs shouldn't let their pursuit of point solutions distract from the ultimate key to success: the customer experience. MySpace learned this lesson the hard way, achieving massive user growth but eventually losing out to Facebook after letting its customer experience fall behind faster-moving competitors. For hubs, an easy-to-use, intuitive and aesthetically pleasing user interface (UI) is a prerequisite for user adoption and sustainability in the market. However, history shows that hubs generate the most adoption by offering features and functionality that other hubs can't. Here, the central focus should remain on the customer—and specifically on the data that hubs collect and can apply back to their solution to make it more intuitive and useful. Google has employed this strategy to much success, consistently enhancing its offerings by applying insights gleaned from usage data.

The key risk that hubs face is inherent to their core value proposition: one user experience tying together multiple point solutions. Connected Home users don't want to use multiple hub solutions to control their point solutions. This puts hubs in the most precarious and competitive of positions. One way to fortify their position is to offer exclusive features or functionality. Apple is doing this with Homekit: it's the only hub that allows users to use native iPhone functionality, such as the iPhone Control Center and Siri.

Business model 3: Connectivity

Key characteristics

Connectivity providers build and maintain the necessary communication pathways between the point solutions, hubs, and end users. MSOs and telcos have built multi-billion dollar businesses providing internet, television, and phone services to customers, and the rise of the Connected Home has provided a natural fourth revenue stream for many of these companies. Players like Comcast, AT&T, DirecTV, Telefónica, Cox, and Time Warner Cable all have entered the Connected Home space in various fashions, leveraging their pre-existing relationships with customers and established operational infrastructure.

In the existing connectivity business model, providers generate revenues via an upfront installation charge, followed by monthly recurring service fees. Most customers purchase two or more services from MSOs and telcos as a bundle that typically includes internet and television offerings. This generates a high degree of customer 'stickiness' and means companies like Comcast get to enjoy long-standing relationships with customers. Massive fleets of technicians visit customer homes every day to troubleshoot issues, call centre agents maintain 24/7 availability to handle customer service and billing calls, and consolidated bills get delivered every month. Additionally, since the bundle offerings require devices like modems, routers, and set-top boxes to work, connectivity providers already have foundational hardware for the Connected Home installed in customer homes.

Growth strategy and key risks

Since connectivity is a required—and lucrative—enabler of the Connected Home, MSOs and telcos find themselves in the unique position of not having to directly enter the market at all. This strategy, however, comes with a serious risk: doing so allows Google, Apple, and others to make inroads with the customer bases of connectivity providers, establishing brand trust, building billing relationships, and getting devices into the hands of consumers.

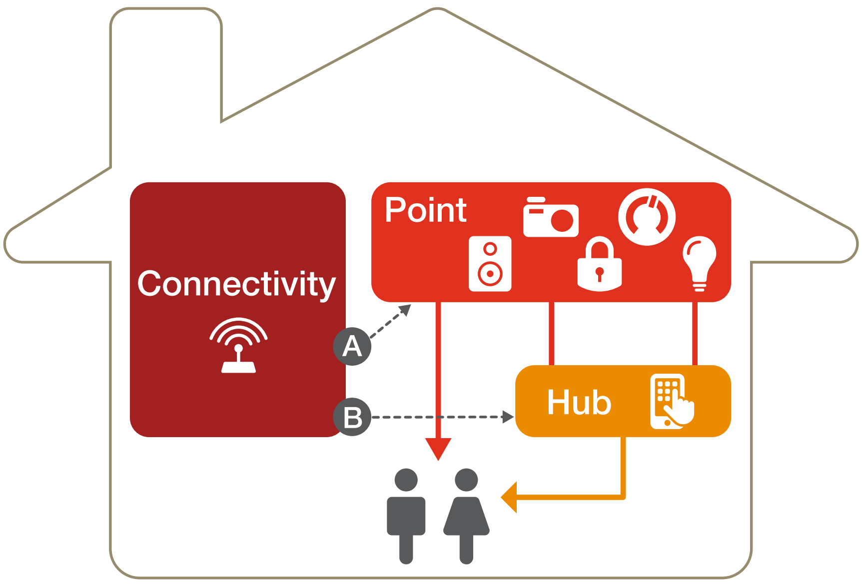
Additionally, by not entering the Connected Home market, MSOs and telcos pass up the unique benefits it would bring their core products. Adding a Connected Home offering to the core product bundle delivers enhanced user experiences for the customer. Case in point is the ability to monitor and control Connected Home offerings from the television via the set-top box. Plus, adding a fourth product to the traditional "triple-play" bundle can increase customer retention, as customers may find it harder to part ways with four products instead of three, two, or just one.

A final argument for offering a Connected Home service is the two key competitive advantages that all connectivity providers have over point and hub solutions. First, MSOs and telcos have pre-existing service/billing relationships with a massive amount of potential Connected Home customers and the infrastructure in place to support them. A Dropcam customer, for example, can't call customer support 24/7 or have a technician show up to his/her house to fix an issue. Nor can that customer consolidate all home services onto one contract or bill—instead, he or she will have to sign up with and manage payments to Dropcam separately. The second advantage connectivity providers have is the proprietary hardware that already resides in customer homes. Devices like set-top boxes, modems, and routers can all be leveraged for Connected Home offerings, enabling more efficient means of installing and activating services.

Given the risks of not providing a Connected Home offering, the benefits of doing so, and the inherent advantages connectivity providers have, it seems clear why MSOs and telcos should enter the market, moving in the direction of point and hub solution offerings (see figure 4).

Figure 4: The growth dynamics for connectivity solutions in the Connected Home

Offering point and/or hub solutions in various capacities (A and B) in an effort to get closer to the end user.



When connectivity players try to offer point/hub solutions, the brand hurdle rises dramatically.

This movement can be achieved via one of three methods, listed by the amount of capital required and benefits realized:

- **Branded Point/Hub Offering—** Connectivity companies can offer their own point solutions and/or hub solutions in the connected home market. Select providers are doing this with a combination of point solutions, a hub, and branded user interfaces. This option serves as both an offensive measure—allowing companies to take advantage of their unique benefits—and a defensive one—since it prevents another brand from building a relationship with customers—though it's the most complex and capital intensive of the three.
- **Private Label Offering—** Connectivity companies can take advantage of their established operational infrastructure by offering private label solutions. Not many companies are equipped to handle constant customer calls, deploy technicians to homes to fix issues, or manage customer billing relationships as well as MSOs and telcos. Choosing this option, while avoiding some or all of the customer acquisition cost (depending on the terms of the agreement), means allowing another brand build a relationship with customers.
- **Licensing—**Connectivity companies can monetise their existing "pipes into the home" by partnering with third-party point/hub providers. Telefónica, for example, recently entered into a licensing agreement with AT&T's Digital Life; Telefónica provides the connectivity, while AT&T provides the point/hub solution. This is the least capital intensive option for connectivity providers, and forces them to forgo some of the benefits that an owned branded solution would provide.

Though connectivity companies enjoy several unique advantages over their Connected Home competitors, they must ultimately overcome a significant risk to survive and prosper: negative brand perception. Over the years, select companies have seen their brands impacted by very poor customer satisfaction scores and overwhelmingly negative public sentiment. When it comes to traditional products like Internet, this hasn't proven to be a big deterrent to prospective users—customers typically have limited options to choose, and the services themselves are not personal in nature.

When connectivity players try to offer point/hub solutions, the brand hurdle rises dramatically. In buying a Connected Home solution, a customer is literally inviting a brand into his/her home to watch over loved ones, sense family movements, and learn patterns of behaviour. If given a choice between an MSO and a tech company with positive brand perception, customers may opt for the latter. Equally concerning is that prospective employees may make the same choice—a phenomenon that would mean the best and brightest Connected Home talent would opt to work for premier companies. To counter this, connectivity players can do one of two things: repair their brand perception in the market, or choose to offer private label services.

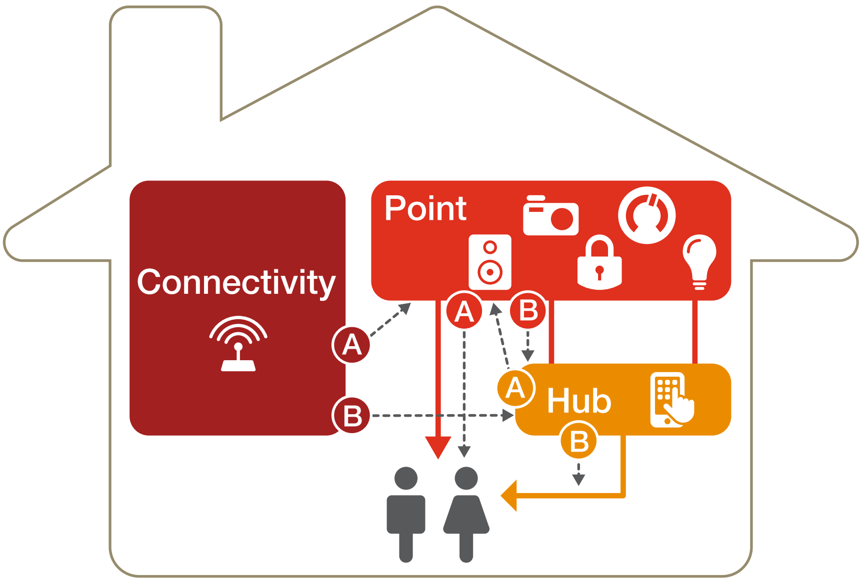
Conclusion: the customer calling the shots

In the Connected Home, all roads lead back to the customer (see figure 5). Whether you're a hub, point, or connectivity solution provider, you need to maintain an intense focus on building, maintaining, and protecting an industry-leading customer experience. With so many market participants, customers have more choices than ever before about which brands to buy and which hub/point offerings work best for them.

In such an environment, disruption is inevitable; differentiation is key; and complacency is the enemy. Will connectivity providers be able to overcome negative brand perception? Can point solutions avoid the pitfalls of commoditisation? Will hubs capture enough high-value point solutions and offer a sufficiently superior experience to avoid irrelevance? Only one thing is sure: the fate of the Connected Home players lies in the hands of the customer. It's up to the market participants to position themselves accordingly.

Figure 5: Consolidated picture of the growth dynamics for all Connected Home offerings

Jostling for a visible role in the delivery of differentiated Connected Home experiences to the end user.



Endnotes

1 http://www.freemium.org/what-is-freemium-2/

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The authors would like to thank **Colin Carroll**, **Michael Callahan**, **Chris Costello**, **Geoff Helt**, **Johnathan Tran** (all from PwC US) for their contributions to this article.