Got API?

Bits Versus Electrons

Got API?

By Bob Frankston

If your home-control product doesn't have an open application program interface (API), then it's a niche product and not part of the future of connected devices. With that in mind, when I headed out to the 2018 Consumer Electronics Show (CES) this past January, here's what I planned to ask every exhibitor: Got API?

I wrote the first draft of this column as I prepared to attend CES, where I expected to see a raft of home-automation products. In 2017, those tended to be products such as lights controlled by apps on smartphones using Bluetooth as well as Zigbee and Z-Wave protocols. This year, I anticipated that Amazon's Alexa would dominate that niche. The smart home is something we can all relate to; although, the principles also apply to smart cities and the larger landscape of the Internet of Things.

The plan at CES was to ask exhibitors whether there was an open interface (or API) that would allow people to use their products for more than the original use case. Devices that provide open APIs, like Google's Nest and Samsung's SmartThings, expand their market. They allow the products to be integrated with other applications. For example, a stand-alone window shade that opens in reaction to sunlight is more than just a smart shade if it can also be integrated with other applications that use the shade as a resource and, likewise, draw from other sources.

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Having to use a separate application for each device is like having to use one remote control for the TV power, another to change the channel, and yet another for the volume. However, for digital systems, the scenario is worse, because each user must have the full complement of applications and maintain them. The "smarts" are embedded in the device, but I can't add my own (or buy) smarts with software. I need access to an API to integrate the device into larger systems. Limiting the API to only channel partners and Alexa reduces the possibilities for unanticipated innovation. Though few people will create shareable applications, the few who do can create entirely new uses or hardware and services and possibly open up new markets. The products that are open will benefit from their enthusiasm.

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ADDITIONAL BENEFITS OF AN API

An open API has additional benefits. It forces good design by separating the hardware functions that slowly change from the software interface that can rapidly improve. This prospect is even better if those capabilities are available to browser-based (HTML5) applications using web APIs. The browser tools allow for a much richer interface than simple panels, and the browser app can take advantage of other sources, such as recipes when controlling an oven. In the future, there may be markets for different front ends for appliances.

We're at the earliest stage of a new frontier, such as when small computers were dedicated to a single purpose like word processing. When Dan Bricklin and I chose to build VisiCalc (http://VisiCalc.us) on personal computers, we gave them a platform to do so much more. I applied this lesson to home networks with generic connectivity. This is why we are increasingly seeing a shift to Wi-Fi for connected devices rather than specialized protocols such as Zigbee and Bluetooth. We will see a shift from cloud-based interfaces to devices such as cameras and light bulbs, which have their own APIs that are often HTTP based.

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If your home control product doesn't have an open API (Application Program Interface), then it's a niche product and not part of the future of connected devices.

With that in mind, when I headed out to Consumer Electronics Show (CES) 2018 this past January, here's what I planned to ask to every exhibitor: **"Got API?"**

I wrote a first draft of this as I prepared to go to CES expecting d to see a raft of Home Automation products. In 2017, those tended to be products such as lights controlled by apps on smartphones using Bluetooth as well as Zigbee and Z-Wave protocols. This year I anticipated that Amazon's Alexa would dominate that niche. The Smart Home is something we can all relate to, although the principles also apply to Smart Cities and the larger landscape of IoT (Internet of Things).

The plan at CES was to ask whether there is an open interface (or API) that will allow people to use the products for more than the original use case. Devices with open APIs like Google's Nest and Samsung's SmartThings expand their market by providing open APIs. They allow the products to be integrated with other applications. For example, a standalone window shade that opens in reaction to sunlight, but which can also be integrated with other applications which use the shade as a resource.

Having to use a separate application for each device is like having to use one remote control for the TV volume, another to change the channel, yet another for the lights. But worse since each user has to have the full complement of applications and maintain them. The smarts are embedded in the device, but I can't add my own (or buy) smarts with software. I need access to an API to be able to integrate the device into larger systems. Limiting the API only to channel partners and Alexa reduces the possibilities for unanticipated innovation. Though few people will create shareable applications, the few who do can create entirely new uses or hardware and services and possibly open up new markets. The products that are open will benefit from their enthusiasm.

Additional Benefits of an API

An open API has additional benefits. It forces good design by separating the hardware functions that change slowly from the software interface that can improve rapidly. Even better if those capabilities are available to browser-based (HTML5) applications using Web APIs. The browser tools allow for a much richer interface than simple panels. The browser app can take advantage of other sources such as recipes when controlling an oven. In the future there may be markets for different front ends for appliances.

We're at the earliest stage of a new frontier as when small computers were dedicated to a single purpose like word processing. When Dan Bricklin and I chose to build VisiCalc (http://VisiCalc.us) on personal computers we gave them a platform to do so much more. I applied this lesson to home networks with generic connectivity. This is why we are increasingly seeing a shift to Wi-Fi for connected devices rather than specialized protocols such as Zigbee and Bluetooth.

We will see a shift from cloud-based interfaces to devices such as cameras and light bulbs which have their own APIs, often http-based.

It's easy to just build a device and use a dedicated app or, now, Alexa, to deliver functionality. It demos well to the end user. And it's easy to understand why one wants to work with selected partners because it's easy to see the

direct benefit of each relationship. But to tap into the synergy of a world of smart devices and to benefit from the innovation of millions of prosumers who can share their creations you need an interface for software.

So, as I go meandered through the show floor at CES, my question was: **Got API?** While I was pleased to find an increasing number of companies providing such interfaces. Those companies are looking ahead. Is yours?