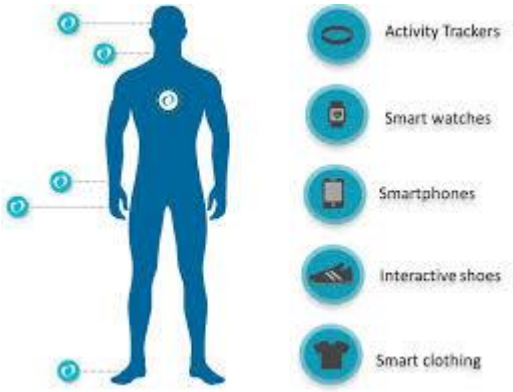
Extending a Fitness Industry Revolution: Cassia long-range and multiple connectivity Bluetooth IoT

Situation: The next level of gamified fitness needs a system upgrade

Turning to real-time data streaming from individual performances, fitness organizations, including health clubs, and event organizers (like running, triathlon, biking, etc.…) are differentiating their marketplace offerings. Combined with behavioral science, data-enhanced gamification of fitness provides a fast runway to marketplace differentiation and user loyalty for fitness phenomenon's, like Orangetheory. The Orangetheory model, where participants wear heart-rate monitors and track their stats on overhead screens is exploding.

A key behind-the-scenes element in this wave of gamified fitness, whether it's Orangetheory, senior center fitness classes, or kids' sports, are light-weight, connected wearable biometric monitoring devices, like heart rate monitors and activity trackers streaming data in real-time.



Obstacles: Range, Phones as Gateways

However, real-time data streaming, even as it is used to create intense fitness brand loyalty, competitive feedback, and a "tribal" sense of "belonging" has limits. Many wearables providers have embraced Bluetooth for its advantages in low-power, reliability, and low cost.

And yet, even as streaming fitness data gets more interesting, limits in Bluetooth range to 10-meters, and its one-to-one connectivity have served as stumbling blocks to push this successful model.

- **Oh ?#@*&! My data disconnected!** Athletes are seeking the freedom to move freely in a fitness environment. In fitness environments where participants moved beyond Bluetooth's traditional range, such as at mid-sized or larger fitness clubs, or at field events with many athletes', real-time data streaming was previously not possible or reliable.

- **No More Sweaty, Broken Phones.** Athletes are seeking freedom from the inconvenience of capturing data by carrying a “personal gateway” portable device (mobile phone). The need to use a mobile phone to capture data from Bluetooth-enabled or other biometric devices (chest strap, bracelet, etc.) smart clothing, or compression gear is inconvenient and creates friction in the fitness user experience.

- **Field-level fitness data capabilities:** In addition to individual athletes, coaches and organizations seek ways to view multiple participants’ data in real-time across a wide area (“Field-level” data). The data is used in innovative training, competition, and social feedback loops reinforcing the athletes’ personal and shared experiences.

Action: Reliable coverage and data streaming

In a project with Bluetooth enabled smart clothing partner, Cassia Networks long-range, one-to-many Bluetooth connectivity has pushed beyond the current Bluetooth challenges; limited range, limited connections, proprietary devices, and the “Sweaty Phone/Lost Data” issues of a traditional Bluetooth gateway.

In this case, Cassia’s partner was looking for a way to view data from multiple users of its smart clothing products in a club viewed on a single tablet. Cassia’s Bluetooth routers reliably streamed the smart clothing data from athletes to a single tablet even as the athletes moved throughout a large fitness club filled with metal weight plates, TVs, and electronic fitness equipment.

While some fitness clubs hand out a single Bluetooth device to capture biometric information, many users have personal preferences for a wearable device type, brand, and form factor (chest strap vs. wrist band, button vs. touch screen, on vs. off, etc.) customized to their own preferences.

Result: Wearables and data-enhanced fitness

Cassia Networks Bluetooth routers serve as a key component of "data enhanced" fitness by providing multiple connections over an extended range. While storage and transmission of data from biometric devices has focused on Bluetooth Low Energy (BLE), this "field" level transport layer using extended range Bluetooth was lacking.

Also, the Cassia software development kit (SDK) allows Bluetooth device manufacturers to easily integrate their custom BLE devices profiles with the Cassia router. ***As a result, wearable solutions using custom BLE devices can easily be built to monitor large numbers of club members in a gym, or athletes on sports fields in real time.***

The business model for gamified fitness has proven highly successful at venues like Orangetheory, Omni Fight Club and others where heart-rate data results real-time visibility to individualized fitness data as well as the ability for coaches, trainers, etc. to use this data to create a "social effect" resulting in intense loyalty to these brands.

The collection of physiological fitness data lends itself to several areas of use, including:

- Data analysis and visualizations
- Data assessment and benchmarking
- Real-time feedback – coaches, spectators, and tribe

Moreover, using Cassia's Bluetooth Routers in conjunction with these systems extends the communication of BLE data across a 1000-foot range with many participants simultaneously. This results in many loyalty-building and creative applications (example, tracking athletes in a team sport with a Bluetooth enabled ball) previously not possible.

Cassia's field-level Bluetooth transport layer delivers freedom from limitations to specific biometric devices, and the use of "sweaty phones" as gateways. It also provides the freedom to participate in socialized science-backed fitness events beyond the traditional range limits of Bluetooth.

Orangetheory and Omni Fight Club applied a new level of behavioral and science-backed thinking to traditional "fitness clubs" to re-segment a marketplace and grow exponentially. Organizations adopting this "Connected by Cassia™" Bluetooth capacity - extending Bluetooth range and connectivity - are positioning to further revolutionize the fitness industry.