Disney’s MagicBand
THE MOST MAGICAL WEARABLE ON EARTH

• Disney’s MagicBand provides entry into its theme parks, handles front-of-the-line passes, enables cashless purchases, and much more

• Most recently, about half of Disney World guests were using the MagicBand and 90% rated their experience as excellent or good

• Its power and simplicity make Disney the likely stealth leader in wearable tech
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Executive Summary

Disney is likely the stealth leader of the wearable tech industry, which is currently wringing its hands over a paucity of attractive consumer products. Despite a flood of venture-capital investment and an host of talented engineers working furiously to develop the technology, wearable tech still hasn’t produced a real hit. But in any given year, about 30 million guests visit Disney World in Orlando, and at least half of them put on one of Disney’s smart wristbands, called the MagicBand. These figures will only increase when the device is rolled out to Disney’s other properties, and another 90 million visitors are able to slap a MagicBand on their hot little wrist.

The MagicBand is a bit of a Swiss Army knife for the theme park visitor: it opens your hotel room door, gains you entry into the park, manages the passes that let you jump to the front of the line for the hot rides, lets you buy stuff and sends a radio signal to the Disney photographer when you hit a photogenic spot on one of the rides. Combine it with Disney’s website and/or smartphone app, and you can plan your entire trip. Disney’s mainframes will calculate the optimal times for your cut-the-line passes in order to make your stay as pleasant as possible, and Cinderella and Aladdin will even greet you by name, if you opt in to let them. Also, if you lose your pass, you’re covered, and your kids can only charge up to $50 through MagicBand without needing a PIN number.

The MagicBand is a bona fide wearable tech device: it has a processor, wireless communications capabilities and a sensor of sorts (an RFID tag)—and it’s available today. Battery life is two years, so you don’t have to recharge it, and it’s sold for a wallet-friendly $12.95 for a single-color version.

In developing this simple, powerful wearable device, Disney has vaulted ahead of the herd of companies cogitating on the next killer device. Although its application is limited to the Disney World theme park right now, it doesn’t have to be, and the device could define the coming generation of wearable tech for all of us. Given the Apple Watch’s recent launch and hype, we cannot avoid mentioning it here. Will the MagicBand become the new Apple Watch, or will the Apple Watch become like the MagicBand? Clearly, the MagicBand is the device to beat for Apple and other companies developing wearable technology, at a fraction of the price. As Jiminy Cricket croons, “When you wish upon a star, your dreams come true.”

What Is MagicBand?

The MagicBand is a smart wristband with wireless communication capabilities for theme parks. Essentially, it functions as a room key, park entrance ticket, line-jumping pass and credit card for guests visiting Disney resorts and theme parks.

MagicBands are provided automatically to guests at Disney resorts and to annual passholders; other guests can order them online or purchase them at the theme parks. Guests can select a band in one of seven colors and have their nickname etched on it, and there are a host of accessories available with which to decorate the bands. MagicBands were initially rolled out at the Disney World theme park in Orlando, and will later be introduced at Disneyland in Anaheim and at international parks.
When a MagicBand is connected to Disney’s MyMagic+ ecosystem, the guest wearing the band can organize and receive a suite of benefits, including:

- Gaining admission to Disney theme and water parks
- Managing FastPass+ line-jumping tickets
- Accessing photos and videos on MyDisneyExperience.com
- Accessing hotel resort rooms
- Purchasing merchandise and food and beverage
- Communicating with casts’ mobile devices
- Arranging seating at events such as fireworks shows
- Arranging meet-and-greets with Disney characters

Disney can use the radio on MagicBand to track the wearer’s location within the park in order to better manage ride loading and people flow, as well as serve as the trigger for on-ride photos and videos that are stored on the wearer’s PhotoPass account.

The bands also include FastPass+, which represents a major improvement to the FASTPASS system that currently requires the collection of paper tickets for accelerated access to rides. Other benefits include reducing the likelihood of lost tickets and fraud and preventing the swapping and sale of FASTPASS tickets.

For security, the guest’s photo also is associated with his or her MagicBand. Purchases via the bands are limited to $50 unless a four-digit PIN is used, which enables parents to control their children’s expenditures.

If a MagicBand wearer opts in, he or she can receive greater personalization, such as being greeted by name by Disney characters. For example, users can choose to respond to questions such as:

- “Do you want park employees to know your name?”
- “Do you want Disney to send you special offers when you get home? What about during your stay?”

As of June 30, 2014, about half of Disney World guests were using the MagicBand, and 90% rated their
experience as excellent or good. By September 2014, nearly 10 million guests had worn MagicBands.

Although other theme parks introduced RFID bands long before Disney—Great Wolf Resorts started using them in 2006—it’s understandable that a company of Disney’s size (30 million guests visit Disney World annually) and reputation would take the time needed and make an investment serious enough to ensure that the technology works flawlessly and is easy to use.

The Disney Experience Starts at Home...and Continues Long After the Visit

The MagicBand is just one component of Disney’s strategy, which it calls MyMagic+, to improve guests’ experiences (and enhance revenue) at its theme parks. The Disney experience starts long before guests arrive at a hotel or park. Within the MyMagic+ suite of services, guests can plan their visit using MyDisneyExperience.com and make the most of their stay using a MagicBand or FastPass+ card.

Once a guest has signed up for the service and selected three FastPass+ rides, Disney’s computers get to work and calculate the optimal ride times to ensure that the guest’s wait time is minimized and that traffic flow and wait times for other guests are managed as well.

After visiting the park, guests can access photos and videos captured by Disney photographers that are stored on PhotoPass, from which they can be printed or downloaded, all for a fee.

The Technology

Disney has applied for, and been granted, more than 10 patents for its MagicBand, which is a highly sophisticated radio frequency (RF) wireless transmitter receiver with an RFID chip. The bands can also be read by long-range readers located at the resorts, in order to deliver personalized experiences and improved customer service. Guests can still elect to use FASTPASS cards in lieu of MagicBands, but the long-range readers cannot read those cards.

The electronic module transmits and receives RF signals in the 2.4 GHz band (which is shared by Wi-Fi, cordless phones and microwave ovens) through a small antenna that can be detected at short-range touchpoints throughout the theme park. Its battery life is approximately two years.

The MagicBand is packed with technology, including a 2.4 GHz RF transceiver core, a 16 MHz 8-bit CPU, 1 KB plus 256B of RAM and 16 KB of embedded flash. It also has several system peripherals, including a hardware advanced-encryption standard accelerator, 16 MHz and 32 kHRC oscillators, an ultralow-power 32 kHz crystal oscillator, and a 12-bit analog-to-digital converter, as well as other serial interfaces.

MagicBands and Disney’s cards offer security through a randomly assigned code that securely links to an encrypted database and does not contain any other customer information. Guests need to enter a four-digit PIN to make purchases over $50.
Benefits to Consumers
For consumers, the MagicBand offers easy entry to the parks, easy purchase of merchandise and three free FastPass+ tickets. Guests’ paths through the park are also managed optimally, which leads to less frustration, more enjoyment, more time spent in the parks and, therefore, higher total spending.

Without a MagicBand, guests have to walk through turnstiles, race to the FastPass+ kiosk for line-skipping tickets, and use cash or credit cards to pay for purchases, all of which result in a great deal of waiting.

Benefits to Disney
MyMagic+ and the MagicBand offer two clear benefits to Disney: improved customer experiences and frictionless spending, both of which lead to higher revenue.

Management commented in its March 30, 2014 earnings call that, historically, guests who have preplanned using tools such as MyMagic+ have spent more time and, therefore, more money, at Disney’s parks. And the advent of MyMagic+ increased the use of the new FASTPASS system by 40%, enabling the accommodation of a higher number of guests in peak periods. Disney’s investment in MyMagic+ (estimated to be $1 billion) was expected to be profitable in the quarter ended Sept. 30, 2014. Although the contribution from MyMagic+ has not been broken out separately, both Disney World and Disneyland experienced record attendance in the quarter ended Dec. 31, 2014 (Disney’s business year ends in September), with combined attendance at both parks up 7% year over year.

Growth in Disney’s Domestic Parks: Attendance YoY

Source: Company reports

Another big benefit to Disney is the wealth of data that MagicBand provides. Guests’ movements, activities and purchases can be tracked throughout the park, and there’s even more data available when guests opt in to certain offerings. The company can use data analytics to interpret this information in order to formulate new offers and promotions.

Conclusion
Is MagicBand the Apple Watch for the rest of us? Probably not, since it lacks a display and doesn’t tell time. Still, MagicBand sets a new standard for wearable devices in terms of simplicity and usability—features that Apple clearly values—and could be the spark that ignites the wearable tech industry. In any case, the band can offer guests at Disney theme parks a more pleasant visit, with less waiting and time lost deciding which rides to visit, as well as hassle-free consumption. Since the quality of guests’ experience and easy payments are both directly related to revenue, Disney’s sizable investment looks like it has already paid off for the company.
Deborah Weinswig, CPA
Executive Director—Head of Global Retail & Technology
Fung Business Intelligence Centre
New York: 917.655.6790
Hong Kong: +852 6119 1779
deborahweinswig@fung1937.com

Cam Bolden
cambolden@fung1937.com

Marie Driscoll, CFA
mariedriscoll@fung1937.com

John Harmon, CFA
johnharmon@fung1937.com

Amy Hedrick
amyhedrick@fung1937.com

Aragorn Ho
aragornho@fung1937.com

John Mercer
johnmercer@fung1937.com

Charlie Poon
charliepoon@fung1937.com

Kiril Popov
kiriipopov@fung1937.com

Stephanie Reilly
stephaniereilly@fung1937.com

Lan Rosengard
lanrosengard@fung1937.com

Jing Wang
jingwang@fung1937.com