

## A Connected World

Think of how many “things” around you are connected to the internet - your work computer, personal computer, tablet, smartphone, video game console, media player, smart TV; and every day we hear of new devices with internet connectivity. In order for these connections to be established, there must be a device inside these “things” that link them to the internet. Sensors or embedded modules allow such items to connect. This is what is called the Internet of Things (IoT), or the interconnection of everyday devices and the way these machines communicate with each other in order to improve efficiency in the daily tasks of both consumers and businesses. IoT is not a new concept with some dating the first internet-connected machine back to the 70s, the ATM. Now, even cows are monitored. In fact, a Dutch company implants sensors into the ears of cattle, allowing farmers to monitor the health of their cows to provide a healthier supply of meat for consumers. Fun fact, cows generate an average of 200 Megabytes (MB) of data per year. By 2008, there were actually more connected devices than there were human beings on planet earth. It is estimated that by 2020, 50 bln objects will be connected to the internet and, with the human population set to be ~7.6 bln, there will be 6.6 objects connected to the internet per person.

### IoT Future

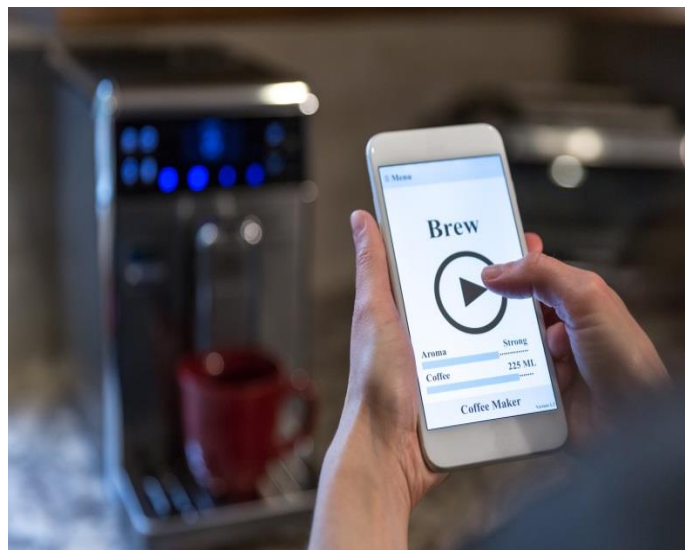
According to the International Data Corporation (IDC), global spending in IoT is expected to reach \$772.5 bln in 2018. Manufacturing industries are expected to be the largest investors, spending a total of \$189 bln. Such expenditures include cost-saving initiatives such as anticipating equipment maintenance needs or consumer-related initiatives such as examining product use by customers. The second largest investments are expected to come from the transportation industry (\$85 bln) on systems involved with freight monitoring or within public transportation with investments ranging from fuel consumption optimization to monitoring driving behaviors for insurance purposes. The utilities sector will invest around \$73 bln on the Smart Grid and other equipment monitoring devices. The fourth largest spender will be the consumer segment at \$62 bln with investments in smart appliances (e.g. smart homes). Going forward, the consumer, insurance and health care provider industries are expected to ramp up spending out to 2021. Cross-industry spending, which represents IoT cases common to many industries (e.g. connected card and smart buildings), is expected to reach \$92 bln.<sup>1</sup>

Please read domestic and foreign disclosure/risk information beginning on page 3.

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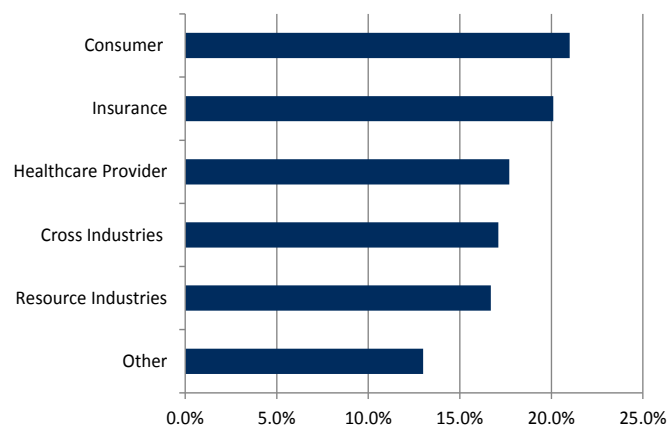
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### Using your phone to brew your coffee



Source: gettyimages

### IoT 5-Year CAGR Spending by Industry



Source: IDC Worldwide Semiannual Internet of Things Spending Guide, 2017H1, Raymond James

Consumer usage includes smart home technology such as automation, security and smart appliances. Your future home could have a refrigerator that tells you what you can make with the food available within it; a media player could welcome you home with music based on your mood (collected by sensors that monitor your vitals); and your thermostat could change your home temperature based on the weather outside (collected from the sensors in your clothes). Other smart home technology includes virtual assistants (Amazon Echo, Google Home or Apple HomePod), thermostats (Ecobee4), light bulbs (Philips Hue White A19 Starter Kit) or smart plugs (TP-Link HS105). As for the connected vehicle, some estimate that by 2020 75% of cars will be connected (compared to the low teens today). One thing to note is that while IoT is not a new concept, its application is becoming more ubiquitous. We understand IoT will take time to reach full market penetration, but we also believe it will present tremendous opportunity for investors in the long run. However, some of the most cited risks regarding connected devices are security related, especially their vulnerability to being hacked, leading to invasion of privacy.

### A connected vehicle



Source: gettyimages

### IoT Play

In order to play the space from a basket approach, clients may be interested in the Global X Internet of Things ETF (SNSR-US). We look at the top ten holdings of SNSR-US in the table below. However, our favorite way to play IoT at the moment is through Sierra Wireless (SW-T). SW helps OEM and enterprise customers connect their machines to the internet; first to cell networks and then to the internet and backend systems – SW is a world leader within the embedded modules and gateways space. They have a series of equipment/ embedded devices that go into machines such as cars and smart meters; they also offer connectivity services to connect those things to cell networks; and finally, they have backend cloud services that give customers tools to manage their devices. The company has shipped 130 mln devices worldwide since 1997 and has customers in over 130 countries. Our constructive thesis on SW is based on our belief for increased IoT adoption, solid organic and M&A growth, the company's involvement in the auto sector and the stock's attractive valuation. Raymond James technology analyst Steven Li also included SW as his top pick for 2018. We advise that clients get in touch with their advisor in order to ensure that such investments are in line with their risk tolerance levels.

### Top 10 SNSR Holdings

Name	Ticker	% of Net ETF Assets	Price (\$USD)	Market Cap (\$USD blns)	EPS Growth	Forward PE
STMicroelectronics N.V.	STM	8.9	23.82	21.7	NA	19.1
Garmin Ltd	GRMN	7.0	63.48	11.9	2.7	21.8
Sensata Technologies Holding	ST	7.0	56.27	9.6	9.7	17.8
Skyworks Solutions Inc	SWKS	5.2	98.00	18.0	10.9	13.7
ams AG	AMSSY	5.1	46.30	7.8	NA	NA
Advantech Co Ltd	2395	4.1	228*	158.9*	8.2	25.9
Cypress Semiconductor Corp	CY	4.1	17.23	5.7	74.7	20.1
Dexcom Inc	DXCM	3.7	58.65	5.1	23.2	NA
Silicon Laboratories Inc	SLAB	3.0	96.15	4.1	106.7	27.2
Belden Inc	BDC	2.6	86.07	3.6	4.4	15.6
Intel Corp	INTC	2.5	47.85	223.9	1.3	13.6

Source: [www.globalxfunds.com](http://www.globalxfunds.com), \* = in Taiwan Dollars, Raymond James

Link to Steven Li Report: [https://client.raymondjames.ca/research\\_documents/a3be7565abd8318c315bb1cd1a18230a.pdf](https://client.raymondjames.ca/research_documents/a3be7565abd8318c315bb1cd1a18230a.pdf)

<sup>1</sup>Source: IDC Press Release, IDC Forecasts Worldwide Spending on the Internet of Things to Reach \$772 Billion in 2018, Pub date December 7, 2017.

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