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Section C

Local inventor wins big in Vegas

Flood-water detector earns prize at CES.

By KATRINA POGGIO
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Brian Boatright knew he was a maker since a child. His passion for innovative ideas and interest in the latest technology drive him to create.

"I enjoy when you get this spark of an idea and you can flesh it out in a design," Boatright said.

His latest design, a thermal imaging device called "Thermo Defender," actually won him the grand prize in the "Bring the Heat Maker Challenge" at the 2017 Consumer Electronics Show earlier this month in Las Vegas.

The Thermo Defender uses a thermal camera to detect flood water flow and automatically engage a remotely controlled water shut-off valve to prevent serious damage. It also acts as a smart smoke detector.

Connected to an app on the user's smart phone, the Thermo Defender sends a notification to keep the user informed when they're away.



KATRINA POGGIO/Lake City Reporter

Brian Boatright stands with the "Thermo Defender" display he presented at the 2017 Consumer Electronics Show in Las Vegas earlier this month. The device is attached to a ceiling and overlooks the floor to detect flood water using thermal technology.

SENSOR continued on 2C

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<div><div>FAMILY PACK</div><div></div><div>Bottom Round Steak \$3.49 /LB.</div></div>	<div><div>FAMILY PACK</div><div></div><div>Lean Ground Round \$3.99 /LB.</div></div>	<div><div>FAMILY PACK</div><div></div><div>Fresh Fryer Mixed Drumsticks & Thighs 69¢ /LB.</div></div>	<div><div>FAMILY PACK</div><div></div><div>Fresh Fryer Boneless Breasts \$1.49 /LB.</div></div>	<div><div>10 LB BAG</div><div></div><div>Covered Wagon Sliced Bacon \$18.99 /LB.</div></div>
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Apples to Apples

Q What are “same-store sales”? — *T.L., West Palm Beach, Florida*

A Sometimes referred to as “comps,” they’re reported by retailers, reflecting sales at stores open a year or more. Imagine that Economical Aviaries (ticker: CHEEP) reports sales of \$25 million in 2015 and \$50 million in 2016. That looks great — 100 percent growth! But now assume that CHEEP had 10 stores open in 2015 and 20 open in 2016. If its same-store sales for 2016 came in at \$25 million, then sales at its stores open for at least a year were flat and didn’t double.

If you boost your number of stores, then of course your total sales will probably rise. Some retailers might open many new units, but their average sales per store might be flat or falling. Examining same-store numbers can help you see the situation more clearly, comparing apples to apples.

Expansion can be good, but companies should be increasing sales at their existing stores, too. Sales growth solely through adding stores is unsustainable.

Q What’s the short-term tax rate for stocks? — *R.W., Canton, Ohio*

A The short-term capital gains tax rate is the same as your ordinary income tax rate, and it applies to stocks held for a year or less. If you’re in the 28 percent bracket and your gain is \$5,000, you’d face a \$1,400 tax bill.

The long-term capital gains tax rate, though, for qualifying assets held at least a year and a day, is just 15 percent right now for most investors. On a \$5,000 gain, that would come to just \$750. So if you’ve held your shares for almost a year, it might be worth it to hang on a little longer.

Want more information about stocks? Send us an email to foolnews@fool.com.



Fool's School

The ABCs of P/Es

A company’s price-to-earnings (P/E) ratio can offer insight into whether its stock is undervalued or overvalued. Think of it as a fraction, with the stock price on top and earnings per share (EPS) on the bottom. Divide the stock’s price by EPS, and voila — the P/E ratio. Many online stock research sites, such as finance.yahoo.com, save you the trouble and calculate it for you.

Imagine the Free-Range Onion Company (ticker: BULBZ), trading at \$36 per share. If its EPS for the last four reported quarters (or “trailing 12 months”) totals \$2, divide \$36 by \$2, and you’ll get a P/E ratio of 18.

Note that if the EPS rises and the stock price stays steady, the P/E will fall — and vice versa. For example, a stock price of \$36 and an EPS of \$4 yields a P/E of 9. Finance types will sometimes refer to this as the stock “trading at a multiple of nine,” meaning earnings times nine gives you the stock price.

You can calculate P/E ratios based on earnings for last year, this year or future years. Published P/E ratios generally reflect past performance, but it’s smart to consider forward-looking P/E ratios, too, for a sense of the stock’s valuation based on earnings projections. Simply divide the current stock price by the coming years’ expected EPS. Compare a company’s current P/E ratio to its historical range, too.

Many investors seek stocks with low P/E ratios, as they can indicate beaten-down companies that may rebound. But remember that a low-P/E stock may be in trouble and can fall further. Remember, too, that P/E ratios vary by industry. Businesses such as carmakers and banks typically sport low P/E ratios (often in the single digits), while less capital-intensive businesses (such as internet companies) can have much higher ones.

Don’t focus too much on a stock’s P/E ratio. There are many other numbers to examine when studying a stock — such as its sales and earnings growth rates, debt level and profit margins. Compare companies to their competitors, too.

Technical Foul

My dumbest investment was with a company doing a lot of business in China. It ended up being a total scam, but it was a successful “chart play” for a time. I just didn’t get out in time before it totally crashed. — *M.T., Japan*

The Fool Responds: Many people get excited when they see the word “China” in relation to a possible investment. After all, the country has more than a billion people, which could translate to boffo sales. Some caution is warranted, though, when dealing with foreign companies or companies doing business abroad. Remember that political events (such as wars) or economic crises (such as lengthy recessions or imploding currencies) can wreak havoc on business.

Also, few countries require companies to disclose as much financial information to investors as the U.S. does. You can usually take some risk out of international investing by investing in American companies that do a lot of business abroad.

Your mention of “chart play” indicates that you were engaging in “technical” analysis of stocks, where much focus is on charts of stock-price moves and interpreting them. This seems a bit like voodoo to many investors. We prefer to engage in “fundamental” analysis of companies, studying their strengths, weaknesses, financial measures and trends, and so on. In short, we view them as the businesses they are instead of simply looking at how their stock price is moving.

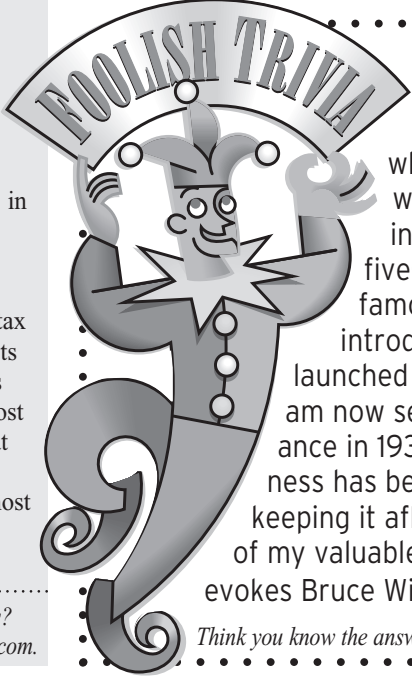
The Motley Fool Take

After a few years of causing pain for investors, shares of IBM (NYSE: IBM) bounced back in 2016, gaining around 20 percent. The company famously spent much of the last decade transforming itself from primarily a hardware manufacturer into a services company. Now it’s becoming a software and services company, thanks to increased sales in its key growth initiatives. IBM calls these areas — big data, analytics, cloud services, mobile and IT security — its strategic imperatives.

Progress appears excellent. For example, in fiscal 2016, IBM’s strategic-imperative revenue grew 14 percent on a constant-currency basis and now represents 41 percent of total revenue. That’s up from 27 percent at the end of 2014 and 35 percent from the fiscal year-end of 2015. Analysts see IBM’s revenue declining slightly in fiscal 2018, but earnings are expected to grow again.

One move paying off is the company shifting its software business to a subscription model. While total software sales have been in decline in recent years thanks in part to this shift, they have now increased for three consecutive quarters.

With IBM stock recently trading at a price-to-earnings (P/E) ratio near 14 and a dividend that recently yielded 3.3 percent, it’s a promising portfolio candidate that will pay patient believers to wait. A successful turnaround is not guaranteed, but there’s a lot to like about Big Blue.



Name That Company

I trace my roots back to 1886, when my founder started selling watches. A company I merged with in 2005 began as the first Kresge five-and-dime store in 1899. My famous catalog debuted in 1888, and I introduced the Discover Card in 1985. I launched the Craftsman brand in 1927 and am now selling it. I created Allstate Insurance in 1931 and spun it off in 1995. My business has been struggling, and I have been keeping it afloat in part by selling off some of my valuable real estate. One of my brands evokes Bruce Willis. Who am I?

Think you know the answer? We’ll announce it in next week’s edition.

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LAST WEEK’S TRIVIA ANSWER

I trace my roots back to 1849, when two German cousins borrowed \$2,500 and opened a chemicals business in Brooklyn. My first product was an almond-toffee-flavored antiparasitic to treat intestinal worms. I produced disinfectants and painkillers for use in the Civil War and supplied penicillin in World War II. I’ve been the top global producer of penicillin and vitamins. Today, with a market value recently topping \$200 billion, I’m a medicine and vaccine giant with consumer brands such as Advil, Nexium, Centrum, Robitussin, ChapStick, Emergen-C, Caltrate, IMEDEEN and ThermoCare. My best-selling drugs include Lyrica, Lipitor and Viagra. Who am I? (Answer: Pfizer)



Want to Invest? Email us at fool@fool.com, and we’ll send you some tips to start investing. Sorry, we can’t provide individual financial advice.

SENSOR

Continued From 1C

“If those things burst or have a leak when you’re away, it will cause a tremendous amount of damage,” Boatright said.

Since floods can quickly cause more than thousands in damage, Boatright sees the Thermo Defender benefiting home owners or even small business owners.

“It gives you another element of protection that you don’t currently have right now for flood waters,” Boatright said. “You’re adding thermal imaging to your safety layer.”

The competition, sponsored by FLIR and Wired Magazine, asked inventors how they would use the new FLIR Lepton, long wave infrared thermal camera.

Boatright, of Lake City, already knew what he wanted to submit for his idea.

“It’s been in the back of my mind for a long time,” Boatright said.

After being selected in November as one of five semi finalists out of more than 200 contestants, Boatright got to work to build the Thermo Defender. But with only six weeks to turn an abstract idea to a functional prototype, Boatright needed a team.

“It was a pretty tight deadline,” Boatright said.

He collaborated with his Eyespike Corporation busi-



KATRINA POGGIO/Lake City Reporter

Brian Boatright shows the heart of his creation the “Thermo Defender.” The new FLIR Lepton, long wave infrared thermal camera sits atop a Lepton developer board.

ness partner Mike Heston, and his best friend Jeff Thompson.

“The win was a group effort,” Boatright said.

He remembers standing with the other contestants as he was announced the winner.

“I was genuinely surprised,” he said.

As the grand prize winner,

the Thermo Defender was showcased at the WIRED Cafe at CES and will also be featured in the April issue of Wired Magazine. But Boatright is looking to keep working on the device to make it available to the public.

“I’d love to see it become an actual product and be picked up and made widely

available,” Boatright said.

The existing prototype would not be the final product, but he imagines it would look similar to the Nest Protect, a smart industrial-grade smoke detector that sends notifications directly to the user’s phone. Another option would be for the “Thermo Defender” to become an extension of

another device, Boatright said.

“The management I spoke to at FLIR really loved the idea and they’re working with me to see how we can get it into production,” Boatright said. “But that’s not my forte. I’m a maker. I like to think of things. Turning it into an actual product is going to

be a bit of a challenge.”

But with more hard work on the horizon, Boatright is soaking up the satisfaction of the win.

“We worked so hard on this,” Boatright said. “We did the very best that we could. It’s always a good feeling when you’ve done the best that you can do and you win.”