CD306 NOVEMBER 2016

# Insignation of the second seco

The Internet of *Things* or the Internet of *Services*?



# DOGS TO THE RESCUE SOMETHING SMELLS SWEET AND IT ISN'T FLOWERS



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#### **EDITOR'S NOTE**

The US has gone to the dogs. In 2015 there were nearly 78 million households that had at least one dog as part of the family. It's a number that was up 15 percent versus the turn of the century. They truly are man's best friend.

Dogs aren't just faithful companions though. They have skills that rival those of humans. They make for outstanding actors, see Homeward Bound and Air Bud, and help the police protect the peace. In the past they were also used to help clear the way for firefighters as their wagon headed down the street.

They also make for outstanding assistants in health care. They're able to lead the blind, assist the deaf and even help medical professionals identify those in need during times of disaster. If that isn't enough, their senses have even given them the ability to help diabetics stay alive.

In the pages that follows you'll learn more about these puppy powers as well as a variety of stories as we work to keep your assets safe and your auditors happy.

Thanks for reading, and I hope you enjoy the November issue of Dickson Insights.



"There is one thing however that should have paramount value to all others: The value of human life."

- Universal Cancer Vaccine, page 10



## **DICKSON**

when **every** point matters

Recent graduate or experienced professional, we have a spot for you.

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- Engineering
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- Production

At Dickson 'Every Point Matters' and that starts with the hiring of the best employees. Our team is a diverse group of individuals with a multitude of skills, all of which make Dickson an exciting place to work. From our engineering to our marketing department, we welcome new faces with friendly faces, never giving bad nicknames to new hires.

Each day inside Dickson offers a new challenge, and with that new challenge a new opportunity. As Dickson grows, so will you. Come have fun with us, even on Mondays.

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"THE GARBAGE APP REDUCES ENERGY COSTS BY 50% TO 60%. THAT'S NOT PIE-IN-THE-SKY — THOSE ARE REAL SAVINGS FOR REAL CITIES THAT CAN MAKE THEM EVEN MORE LIVABLE AND ENJOYABLE FOR RESIDENTS."

New tech devices may get headlines, but it's the solutions they provide that grant real benefit. Wearables and The Internet of Things (IoT) work the same way. While new devices may be cutting edge and cool to play with, their true value is in the end result. That's easier to recognize when the product itself stinks like, for example, a smart trash can. It's business may be garbage but the service it provides certainly isn't.

This smart can, integrated with sensors, is able to alert city workers when it's ready to be emptied. That doesn't sound as impressive as some of the IoT Award winners in 2015/16, but for cities that are strapped for cash, (and, let's be honest, how many cities can afford to not be cost conscious these days?) it's a technology that has massive potential.

By communicating with utility services, garbage pickups are able to avoid unnecessary stops. This in turn reduces fuel costs. In an interview with TechCrunch, Tim Wolf, the Global Director of Marketing for Smart Grid Solutions at Itron, discussed the product's benefits.

In the same TechCrunch article, the author goes on to discuss how going green is no longer about things like solar energy or electric cars, but about connected devices that are allowing

consumers to save energy through efficiency. Nobody cares about a smart trash can, but saving money is something we can all take satisfaction in. If efficiency can be found in trash pickup it can be found almost anywhere.

We spoke about one such example on the blog a few months ago with regards to emergency rooms and big data, but hospitals are also using IoT technology to save money on energy costs and ensure they have the needed supplies on hand whenever they may be needed. Again, these are examples of substance over style and how the IoT is more about the service provided than the device that's used.

It's why an innovative touchscreen would be irrelevant without a powerful service platform that's driving it. It's why we at Dickson think of ourselves as a SaaS provider more than a device manufacturer. It's also the reason why we're always keeping an eye on the future. What we learn together today could bring the next best temperature monitoring solution for you tomorrow. That's a stink free future we can all look forward to.

Have something personal you'd like to add to the conversation? Send your thoughts to jeff@dicksondata.com for a chance to be featured in a future blog or article in our magazine.





NONE • ABOUT



together, today

best temperature

could bring the next

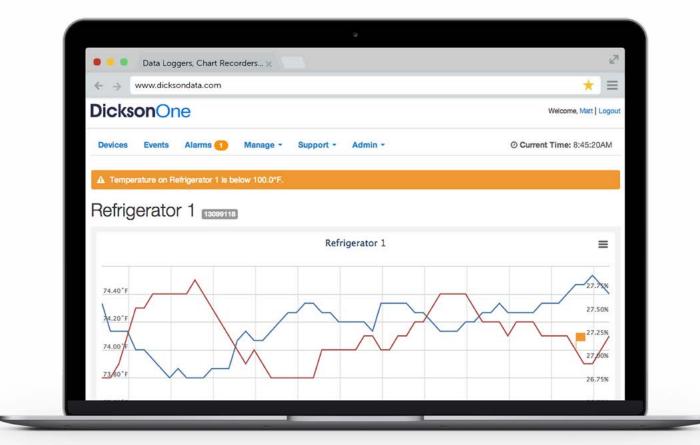
monitoring solution

for you tomorrow.

# TAKE POYER OVER YOUR ENVIRONMENT

We've re-thought temperature and humidity monitoring making it easier, scaleable, and cost effective.

Your data. How you want it. When you want it.





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We utilize bank-grade security and Amazon Web Services for unparalleled reliability.



#### Anywhere

Wherever you are, access your data anywhere, anytime, 24/7.



#### Infinite

Securely store all your data in the cloud, whether you're recording for days, months, or years.



#### Automated

Devices send all collected data to the DicksonOne servers automatically, so you don't have to.



#### On Your Time

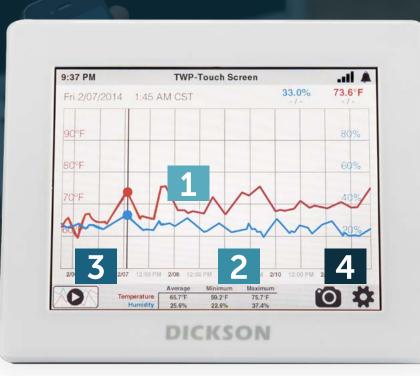
Create customizable reports delivered exactly when you want them.



#### **Immediate**

Receive real-time email, text, or phone call alarms when excursions occur.

# Stay Connected. Wherever You Are.



#### THE GRAPH

We updated the user-interface, and made it easy to view and manage your data.

#### YOUR CHANNELS

The touchscreen automatically calculates and updates summary data for the selected time range

#### MONITORING

Pushing the play button brings you back to the most recent readings, updating the view in real-time.

#### SETTINGS

Easily adjust sample rates, set alarms, and connect to DicksonOne.

#### The Touchscreen

The Touchscreen gives you the option to connect directly to DicksonOne. You get all of your data at your fingertips, and now you can access it anywhere too. Just connect your device to your local WiFi network or plug it into an Ethernet port, log into DicksonOne, and boom, complete data control.



DicksonOne Enabled • Capacitive LCD Touchscreen Replaceable Sensors • WiFi, Ethernet, and USB Connectivity

Email us at support@dicksonone.com | Talk to a specialist at 800.452.4626 | Sign up for a webinar at dicksonone.com

#### Dickson One

#### **Touchscreen**

MODEL REMOTE PROBE

TSB USB Download \$424
TWE DicksonOne Wifi/Ethernet Connection and Download \$524
TWP DicksonOne Download and Power over Ethernet \$599



### Dickson One

# **Display Logger**

MODEL REMOTE PROBE PRICE

DWE DicksonOne Wifi/Ethernet Connection and Download Starting

DICKSON

### DicksonOne Software

One of the most common pain points when discussing monitoring is the retrieval of data. DicksonOne loggers send data to the cloud automatically, freeing up resources to do what they do best.

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per device, per month Requires a credit card

**BASIC** 

**\$0** 

per year

Data stored for 30 days

1 hour sample interval

**STARTER** 

\$300

per year

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n a capitalistic country we often think of value monetarily. How much do you make? How much is your house worth? How large is your

However, there's another definition of the word that we as Americans often forget to consider. It's not about how much something costs, but rather about measuring the value that something holds to an individual. According to the **IF WE FOCUS** UK's Independent, the US values "life satisfaction" above all else.

**ON VALUING** Everything that exists has a distinct value but how it's valued varies depending upon the person. There is one thing however that should have paramount value to all others: The value of human life. It is the single thing that we WE WORK should all strive to maintain and better for all of society. Some days, the things we see on the news makes it harder to remember that than others. No matter how difficult things may get, there is always someone out there working for the greater good.

THING, IF

**IT AND** 

**NOURISH** 

IT, SUCH

**NUMBERS** 

**TOGETHER** 

**TO PROTECT** 

Researchers at Johannes Gutenberg University in Mainz, Germany are one such group of people. Together, they've been working on a new vaccine to fight cancer. After seeing impressive

results in an experiment on mice, they have initiated a limited safety human trial.

If it works as intended, this "Universal Cancer Vaccine" would be able to trigger the human body's built-in defenses to kill cancerous cells. While most vaccines, according to LiveScience, "work as a training course for your body in order to prevent disease", this vaccine would be used specifically to cure it. Below is an excerpt from an article published by BGR.com.

Unlike other vaccines that are supposed to prevent a certain disease, the cancer vaccine would only be administered to cancer patients. Each vaccine therapy would actually be a customized treatment, Science Alert reports, as it would use pieces of RNA extracted from the patient's cancer cells to trigger a reaction from his or her immune system.

The article goes on to quote the doctors who authored the study.

[Such] vaccines are fast and inexpensive to produce, and virtually any tumor antigen can be encoded by RNA. Thus, the nanoparticulate RNA immunotherapy approach introduced here may be regarded as a universally applicable novel vaccine class for cancer immunotherapy.

Science Alert does a good job describing just what that means.

(The vaccine) basically works by shooting tiny 'darts' containing pieces of RNA extracted from the patient's cancer cells at the body's own immune system, convincing them to launch an all-out attack on any tumours they come across. During the team's tests, the mice proved that immune systems are able to aggressively attack cancer when given the proper stimuli to do so.

Based on those results, they proceeded to a limited human trial involving three patients with melanoma. The point was to understand the potential harm such a drug could have in humans, but so far the results are promising. The side effects have involved things like flu-like symptoms, which would be a welcome to change from the kinds of side effects that come with chemotherapy treatments and radiation.

The number of people that such an advancement could affect is staggering. Nearly 600,000 Americans lost their lives to cancer in 2014, while 1.6 million more were diagnosed. It's an epidemic, and it isn't going away. If we focus our time on valuing life more than any other thing, if we work together to protect it and nourish it, such numbers can be curbed. If these doctors continue to work toward the greater good then maybe, just maybe, we can eliminate them all together. There would be few things on Earth that would be more valuable than that.

Have something personal you'd like to add to the conversation? Send your thoughts to jeff@dicksondata.com for a chance to be featured in a future blog or article in our magazine.

or had been diagnosed with cancer as of Jan. 1, 2015 600K Americans lost their lives to cancer in 2014 **NUMBER OF CASES** 50,000-100,000 25,000-50,000 10,000-25,000 0-10.000 No one should face cancer alone. For the toll-free Cancer Support Helpline, call 1-888-793-9355

THE IMPACT OF CANCER

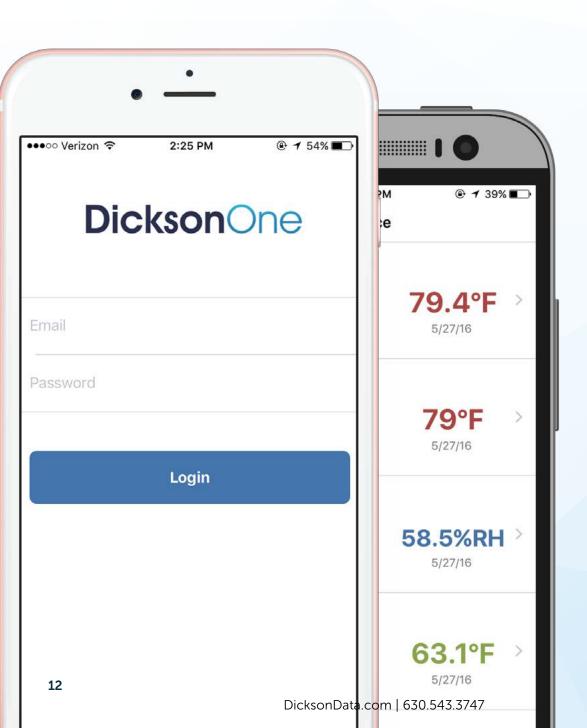
1 in 23 people in the U.S. has

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# THE DICKSONONE

# MOBILE APP



# MILLIONS OF DATA POINTS

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Instant access to all data logger and location information in the cloud.

Anytime. Anywhere.





#### **DID YOU KNOW?**

Dickson was the first manufacturer of temperature monitoring equipment to become an A2LA accredited lab



Assurance that you're getting the best.

# SETTING

# THE STANDARD

Calibrations are essential to all devices that measure a variable. However, we often get the questions, "Why isn't it accurate already?" "Isn't it made to be accurate?" The answers are: it is, and yes. However, while our devices are accurate without calibrations, we can't be positive they are accurate to a specific measurable degree (and thus can't prove their accuracy) unless we perform a calibration.



#### STEP ONE

We compare your sensor with a standard sensor in a stable environment across a range of temperature readings.

#### **STEP TWO**

If there are any differences between the sensor and the andard, we adjust the senso to align with the standard.

#### **STEP THREE**

We run though the above rocess multiple times, adjustin the device as it is compared at multiple temperatures.

#### **STEP FOUR**

We perform a final check of one or more points, depending on your order, and create the necessary calibration certificate

#### **CALIBRATION OPTIONS**

What works for my company?

#### 1-POINT **NIST**

- One specific temperature point calibration
- Good if your temperature varies by little
- Choice to specify the temperature point to best reflect your application

**Example:** A calibration lab determines that a device is reading 26°F when it should be reading 24°F. So, the calibration lab adjusts the device two degrees, so that it now reads 24°F. A 1-point NIST assures accuracy at this specific point.

#### **3-POINT NIST**

- Three-point (high, middle, and low) temperature point calibration
- Grants a larger proof of accuracy
- Choice to specify the temperature point to best reflect your application

REPLACEABLE SENSORS



# ALL YOUR CALIBRATION DATA, RIGHT ON THE SENSOR.

Now, you have the option to calibrate the sensor as opposed to the unit. Think of it like this: the Replaceable Sensor takes an environmental reading, and the data logger or chart recorder records that environmental reading. By splitting up the sensor from the data logger and chart recorder, we've created a plug and play device, that will keep you in compliance, but save you time and resources.

#### Replaceable sensors allow for:



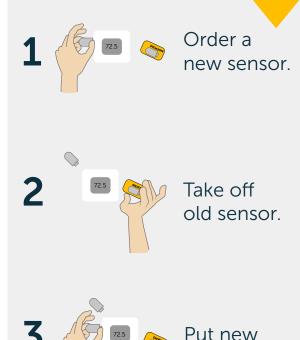
Zero down time



Faster calibrations



More cost effective calibrations



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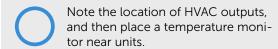
sensor on.

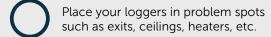
# TEMPERATURE MAPPING 101

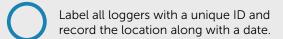
Temperature mapping your facility, warehouse, or refrigerator is a daunting task. We know, we've done it a lot. Dickson can help keep your business fully compliant in audits, streamline your business operations, and protect sensitive products with our temperature mapping services.

#### WAREHOUSE **TIPS**

Warehouses are one of the most common areas that need the service of temperature mapping. We've included a few tips to get your process started.







Know how much distance you should put between loggers.



#### **Getting Started**

Whether you're being audited or just want information on what's happening in your facility, then a mapping report can be an asset to your company. Once the mapping has ascertained where the points of temperature variation lie within a temperature control system, then monitoring can be installed so that owners and users can prove their adherence to the related health and safety standards.



Some industries are required to have documented evidence that environments are under state of control. Let Dickson's skilled professionals get you up to date.

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Validation Services

# SOLUTIONS TO SUIT YOU

If you're in the quality assurance business like us, validation is a term you hear every day. "Validation" falls under the umbrella of terms businesses use to discuss the quality of their product, facility, or service. For those not well-versed in the world of quality assurance, hearing "validation" can send you running to hide under your desk. It's a word that can scare you into a frightful Google search, an emergency call to someone in your quality department, or worse, it can scare you into ignoring it.





✓ ENSURES

CORRECT PERFORMANCE

VERIFIES
SYSTEM MEETS CUSTOMER'S INTENDED PURPOSE

# OQ OPERATIONAL QUALIFICATION



▼ ENSURES CORRECT OPERATION OF SYSTEM PER SPECS

VERIFIES
SYSTEM MEETS CLAIMS
FROM PARAMETERS

#### IQ INSTALLATION QUALIFICATION



VERIFICATION OF CORRECT EQUIPMENT INSTALLATION

CORRECT INSTALLATION OF SYSTEM PER SPECS

✓ ESTABLISHES

BASELINE FOR EQUIPMENT

# VALIDATION VOCAB

If you are reading this, you may be familiar with Medical Device and Life Sciences specific acronyms for example IQ, OQ, and PQ. For those who are new to the specific world of Validation Services, we'll try to help with some of the important terminology.



Dickson offers validation services for our DicksonOne or Dicksonware software, and temperature controlled equipment like refrigerators, stability chambers, freezers, walk-in chambers, and more.

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MODEL	FEATURES	STARTING P	
KT6P	6 Inch Temperature	\$369	
KT8P	8 Inch Temperature	\$419	
TH6P	6 Inch Temperature and Humidity	\$489	
TH8P	8 Inch Temperature and Humidity	\$489	



# 4 and 3 Inch Models

MODEL	FEATURES	STARTING PRICE
SL4350	4 Inch	\$239
SL4100	4 Inch	\$239
SC3	3 Inch	\$239



SL4350 (top) and SC367 shown above

### **DATA LOGGERS**

For data loggers, information (temperature/humidity measurement and date and time) are stored as information. That data is stored in the device for later download (via software) onto a computer, or sent to a cloud application or server for remote access.

# **Compact**

•	
SP125 Temperature Logger. Accuracy $\pm 1.2^{\circ}$ F, $\pm 0.67^{\circ}$ C. Range -10 to 176°F, -23 to 80°C.	\$119
SP175 Temperature Logger with Thermocouple Probe. Accuracy $\pm 1.8^{\circ}$ F, $\pm 0.1^{\circ}$ C. Range -300 to 2000°F, -30 to 50°C. A203 Probe required for +500°F	\$229
<b>TP125</b> Temperature and Humidity Logger. Accuracy ±0.8°F, ±0.45°C. Range -10 to 176°F, -23 to 80°C.	\$199
SK550 Temperature. Pack of twelve. Accuracy $\pm 1.8^{\circ}$ F, $\pm 1^{\circ}$ C. Range -4 to 158°F, -20 to 70°C.	\$699
<b>TK550</b> Temperature & Humidity. Pack of twelve. Accuracy $\pm 1.8^{\circ}$ F, $\pm 1^{\circ}$ C. Ranges -4 to +158°F, -20 to +70°C.	\$999



SP125 shown above



SP425 shown above

# **Display**

SM300 Temperature Logger. Accuracy $\pm 1.2^{\circ}$ F, $\pm 0.67^{\circ}$ C. Range -10 to 176°F, -23 to 80°C.	\$249	<b>TM320</b> Temperature & Humidity. Accuracy $\pm 1.8^{\circ}$ F, $\pm 1^{\circ}$ C. Ranges -4 to +158°F, -20 to +70°C.	\$299
SM320 Temperature Logger with Thermocouple Probe. Accuracy ±1.8°F, ±0.1°C. Range -300 to 2000°F, -30 to 50°C. A203 Probe required for +500°F	\$299	TM325 Temperature and Humidity Logger. Accuracy $\pm 0.8^{\circ}$ F, $\pm 0.45^{\circ}$ C. Range -10 to 176°F, -23 to 80°C.	\$399
SM325 Temperature and Humidity Logger. Accuracy ±0.8°F, ±0.45°C. Range -10 to 176°F, -23 to 80°C.	\$399	SP425 Temperature. Accuracy ±1.8°F, ±1°C. Range -4 to 158°F, -20 to 70°C.	\$159
SM420 Temperature. Accuracy ±1.8°F, ±1°C. Range -4 to 158°F, -20 to 70°C.	\$499	<b>TP425</b> Temperature & Humidity. Pack of twelve. Accuracy $\pm 1.8^{\circ}$ F, $\pm 1^{\circ}$ C. Ranges -4 to +158°F, -20 to +70°C.	\$249

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**Evolution's Solution** 

to Medical Device Needs?

GET A DOG.

#### High Temp Solutions

# **INDICATORS**

1 HT 300 Waterproof, High Temperature Data Logger HACCP and FDA Compliant. USB Download. IP68 Rating. Temperature Range -40° to 257°F (-40° to 125°C).

\$349

HT350 High Temperature Process Logger HACCP Compliant, K-Thermocouple Probe, USB Download, and a large temperature range. Temperature Range -40° to 257°F

\$349



#### Instant Data Solutions

(-40° to 125°C).

# **INDICATORS**

TC700/TH700 Touchscreen Handheld Indicator

Instant temperature or temperature/humidity data. No-slip silicone cover. Battery powered.

\$299



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Dogs have been "Man's best friend" since 1789 when Frederick, the King of Prussia, coined the phrase. According to science, though, the phrase isn't just fancy jargon. It's fact.



Dogs are more than companions.

They're life savers.

From rescue dogs to therapy dogs, there's little our four legged friends can't do.

Researchers from Japan's Azabu University have conducted tests that suggest dog to human eye contact is responsible for an increase in oxytocin in the blood. This hormone is one that's associated with helping to build trust and love. It connects human to animal in ways that are both physical and emotional.

Over time, humans have come to realize that dogs could be trained to do incredible things. One of the most common ways dogs have been trained to help humans involves leading the blind. Organizations like The Guide Dog Foundation and the Guide Dog School work to train animals for the job.

It's a complicated process that involves rigorous training. A few of the things a dog will learn in training involve the following:

- •Leading a person in a straight line from point A to point B
- •Stopping for all changes in elevation, including curbs and stairs
- •Stopping for overhead obstacles, such as tree limbs
- Avoiding obstacles in their path.

Being able to lead the blind and assist those who are deaf is an incredible feat on its own, but man's best friend has more tricks in store. Dogs also have the ability to serve as medical detection dogs. One such example is diabetes detection dogs. The use of dogs to sniff out low blood sugars is relatively new. The first dog trained for sugar sniffing was a California dog named Armstrong in 2003. Since then the Dogs for Diabetics foundation has worked to train dogs and to develop and promote standards for all medical assistance dog

The animal's acute sense of smell gets the credit, but, until recently, we were unsure what exactly it was that dogs were noticing. As it turns out, the dogs are able to recognize the sudden drop in blood sugar based on a human's breath. Isoprene is the main hydrocarbon that's found in our breath and it is the trigger that allows dogs to recognize a hypoglycemia attack. As blood sugar levels drop, the level of isoprene in the breath rises. The scientific discovery could lead to the production of new medical sensors. Researchers still aren't sure why such an inverse relationship exists, but their current belief is that it's related to the production of cholesterol. Until that question is answered, we won't know how to keep an attack from happening, but understanding a way to watch for issues is a major win for the diabetic community in the meantime.

When we've covered diabetes in the past, we discussed its was a growing problem in this country. In fact, it's become such a big deal that caring for it has become a billion dollar industry. How this new discovery affects that amount is still be seen. Logic suggests that new devices will lead to more money. That makes for a healthy business prognosis as our country's health continues to trend in the wrong direction.

Have something personal you'd like to add to the conversation? Send your thoughts to jeff@dicksondata.com for a chance to be featured in a future blog or article in our magazine.

# WHAT KIND OF DOG IS THAT?

Shepherding, cattle rustling, protecting property, cuddle buddies. Dogs can do a little bit of everything. When it comes to dogs working in the health field, terms can get a little confusing. Here are the four most common types of service dogs you will see helping around your community.

#### RESCUE



perform as rescue animals, mainly in areas affected by snow storms or earthquakes to search for survivors or bodies under the debris.

#### THERAPY



people regain movement, improve the mental condition of people in hospitals, or warn of problems for people with dementia causing diseases.

#### **SFRVICE**



Service dogs can provide assistance to visually impaired owners, owners with hearing problems, or owners with Diabetes in order to detect low-blood sugar.

#### COMPANION



Companion dogs are any dog that can provide emotional support and therapeautic healing for someone who has been diagnosed as emotionally diasabled.

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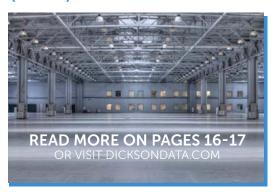
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