

DICKSON insights

TELEHEALTH IS CHANGING THE FACE OF HEALTHCARE

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PLUS: The DSB • Temperature Mapping • A Look at How Ownership Has Changed

HEY, THAT'S MINE!

REDEFINING OWNERSHIP IN A NEW AGE OF GOODS

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JEFF RENOE • INSIGHTS EDITOR-IN-CHIEF

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Swipe Right

Remember the good ol' days? You know, the ones where we'd tinker with our toys until we were callused and tired? Those days are largely gone in today's society. That may be hard to believe in our YouTube addled culture where you can learn how to do almost anything with the clink of a few keys and the click of a mouse. It doesn't make it any less true.

That's because we no longer own what we buy. Confused? You aren't the only one. It's why people are being kept up at night to try and earn you the right to repair your own goods in the future. In their opinion, you should control the destiny of the goods you pay for. Ownership shouldn't come with a disclaimer.

In the pages that follow you'll learn more about the Internet of Things you Don't Own in this special issue of the future of health and technology that was discussed at SXSW '17.

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



Dickson is coming to a tradeshow near you!
Read more on page 15!

TEMPERATURE MAPPING EXPERTS

Intense temperature can put your audit at risk.
Book your winter mapping study now to keep your assets from freezing.

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



PLAN OF ATTACK

We evaluate and decide where to place devices for a successful mapping.



MEET AUDIT REQUIREMENTS

Rely on our expertise to create reports that are defensible in an audit.



IN-HOUSE CALIBRATED DEVICES

No 3rd party vendors here, saving you time and headaches.



WATCH WHILE WE WORK

We'll handle the process from start to finish so you don't lose time.



ENVIRONMENTAL INVESTIGATION

We're here to digest, analyze, and help you understand your facility and its data.

Want more information? Contact a specialist today!
630-563-4210



MORE WITH LESS

How BioTech is Impacting Wounded Warriors

There are few things more heart wrenching than hearing about American soldiers being wounded, or worse, in combat. There are also few things more inspiring than listening to America's wounded warriors talk about moving on after personal tragedy.

At this year's SXSW conference, we were lucky enough to hear the stories of three incredible warriors who have become more with less. That wasn't any more clear than when Melissa Stockwell took the stage.

"I've been able to do more with one leg than I ever could have with two."

-Melissa Stockwell-

Stockwell was the first female from the Iraq war to lose a limb in active combat. Since then, she's become a bronze winner in the Paralympics in the sport of Paratriathlon. She also helped co-found the Dare2tri Paratriathlon club in Chicago where athletes with physical disabilities are introduced to the sport of triathlon.

She wasn't the only wounded warrior to speak in the session either. Joining her were Christy Wise of the US Air Force and Health Calhoun, an

American alpine skier and a veteran of the Iraq war. Calhoun lost both of his legs in combat and found himself confined to a wheelchair.

"I really struggled for two and a half years. I can't explain the difficulties in the beginning."

A major hurdle in his way involved prosthetics. It was difficult for him to find one that properly fit. Even then, it wasn't easy. He had to relearn how to walk.

"It wasn't until four years (after the injury) when I shook off the wheelchair," Calhoun said. "I was able to function again."

What may be most amazing about all of this is how far prosthetic technology has come. Cali Solorio of Ottobock North America moderated the panel. She's the company's Market Manager for Microprocessor Knees. People aren't going to be confused for Arnold Schwarzenegger in Terminator anytime soon, but the technology has come a long way.

"The knee's internal computer (microprocessor) controls an internal fluid, which may be hydraulic or pneumatic," according to Ottobock's website. "The internal computer

monitors each phase of your walking pattern (your "gait cycle") using a series of sensors. The continuous monitoring and control of fluid allows the processor to make adjustments in resistance so you can walk more efficiently at various speeds and walk more safely down ramps and stairs."

Prosthetics aren't just for walking either. Wise, who lost her leg in a boating accident, actually has a portion of her closet dedicated to the many legs she owns.

"This leg," Wise said, pointing to the prosthetic she was currently wearing, "is called Xena, Warrior Princess. I named the leg I run with Bolt, and the leg I swim with is Ariel."

Regardless of what she uses her legs for, one thing is evident. Prosthetics aren't just appendages anymore. They're devices, and they're smarter than ever. It's just another example of devices that are innovating the way things are done in society helping to make things easier and more manageable for all.

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.

WELCOME TO THE CLOUD

DATA AT YOUR FINGERTIPS. ANYTIME. ANYWHERE.

DicksonOne

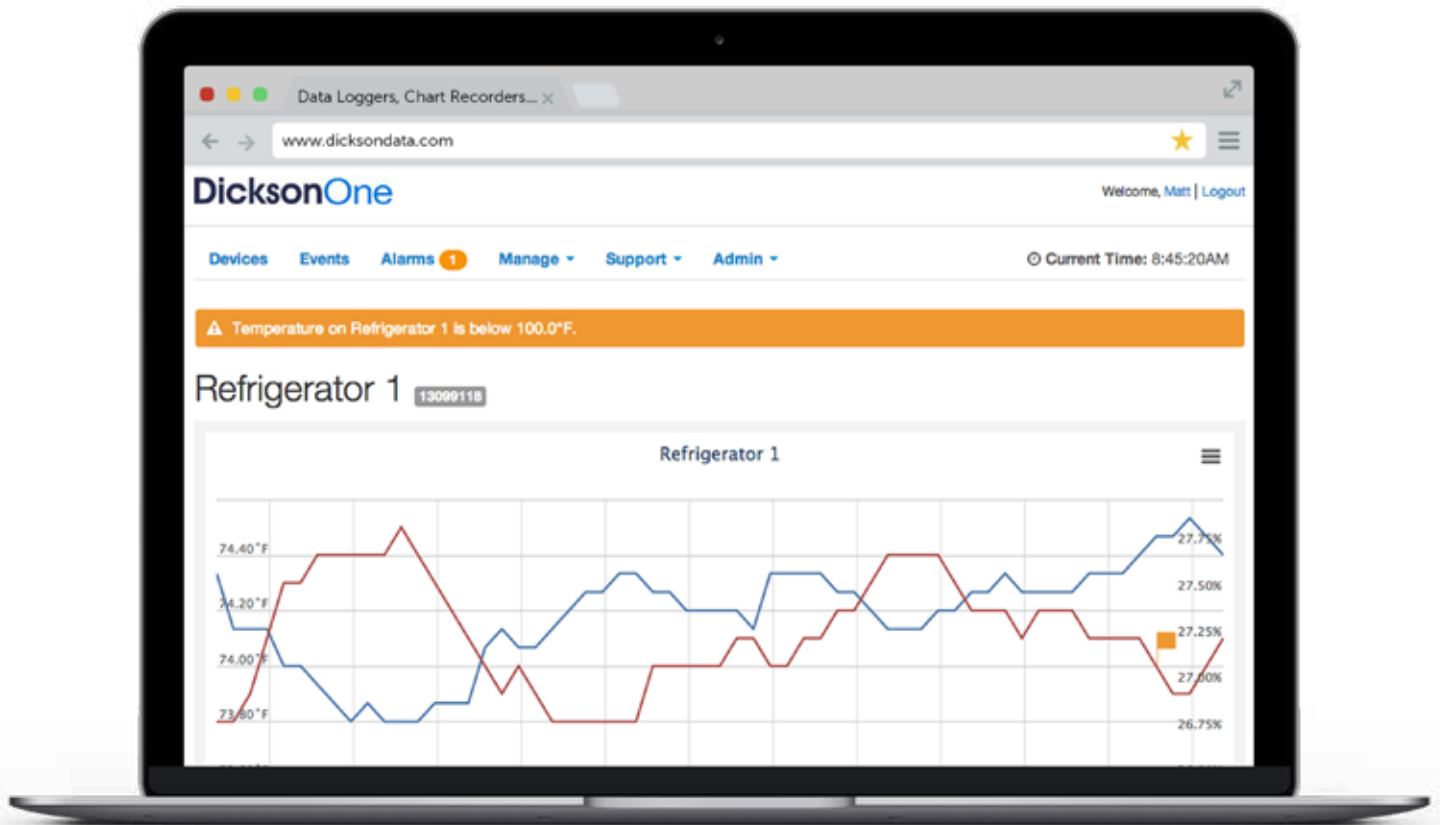




TAKE
POWER
OVER YOUR ENVIRONMENT

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.





Secure

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

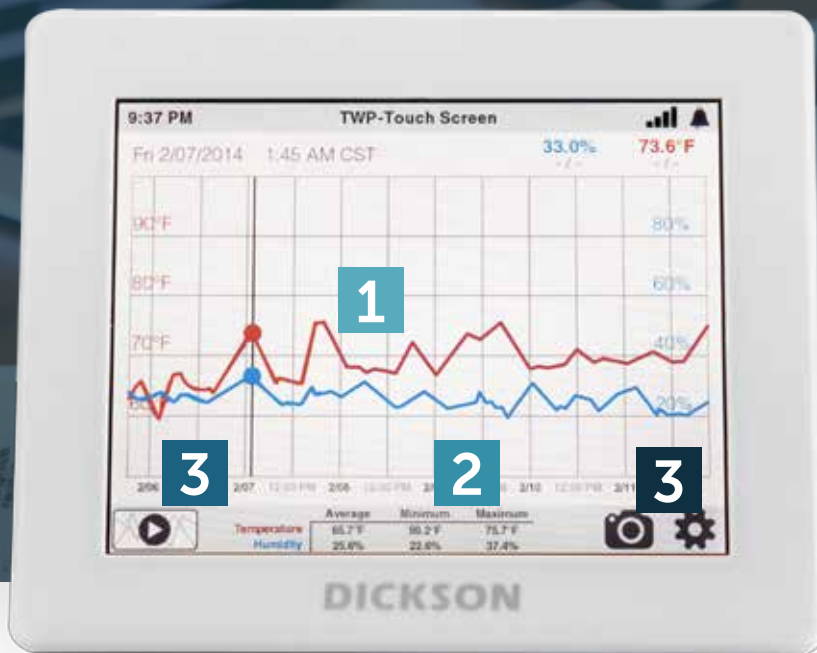
Create customizable reports delivered exactly when you want them.



Immediate

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

Stay Connected. **Wherever You Are.**



01

THE GRAPH

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

02

YOUR CHANNELS

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

03

MONITORING

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

04

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 630-563-4210

DicksonOne Touchscreen

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



DicksonOne Display Logger

MODEL	REMOTE PROBE	PRICE
DWE	DicksonOne Wifi/Ethernet Connection and Download	Starting at \$350



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.

Talk to a specialist now | 630-563-4210

Per device billing
now available!

\$3

per device, per month
requires a credit card

BASIC

\$0

Unlimited Devices
Data stored for 30 days
1 hour sample interval

STARTER

\$300

1-10 Devices
Data stored for life of account
Multiple sample rates
Email, Phone, & Text Alerts
API Access

REGULAR

\$725

11-25 Devices
Data stored for life of account
Multiple sample rates
Email, Phone, & Text Alerts
API Access

PLUS

\$1,400

26-50 Devices
Data stored for life of account
Multiple sample rates
Email, Phone, & Text Alerts
API Access

ENTERPRISE

Call for Quote

51+ Devices
Data stored for life of account
Multiple sample rates
Email, Phone, & Text Alerts
API Access

BUYER BEWARE

Terms of Service

Thanks for using our products and services. By using our Services, you are agreeing to these terms. Please read them carefully.

Our services are very diverse, so sometimes our product requirements (including age requirements) may apply. Additional terms will be available with the relevant services, and those additional terms become part of your agreement with us if you use

Accept Terms

Last modified April 21, 2017
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A Look at how Ownership has Changed in Modern Times

The late Mitch Hedberg once joked about the process of buying a donut.

"I bought a donut, and they gave me a receipt for the donut. I don't need a receipt for a donut. I'll just give you the money, you give me the donut. End of transaction."

That process isn't so simple anymore. Today we have things like mobile apps, loyalty cards, and advanced buying to contend with, and that's just for a donut. Don't get me started on what it takes to buy a coffee these days. The good news is, once a transaction is complete there is no debating a simple truth. You own both of those items.

Unfortunately, if you add technology or software into the purchasing process everything gets thrown for

a loop. The iTunes agreement, for example, is 20,000 words long. If you're counting at home, and I am, that makes it longer than MacBeth by William Shakespeare. According to the browser plugin "Terms of Service, Didn't Read", AKA TOSDR, a service that can boil down a book's worth of copy into snackable points that users can actually understand, "I have read and agree to the terms is the biggest lie on the web."

The long and the short of it? Usually you don't own what you buy. You're leasing it. It puts a lot of limitations on what you can and cannot do with your own products today. This was a major point of conversation at SXSW, and was discussed in detail during the Internet of Things you Don't Own panel.

"In the past, when we've purchased a book, we could do whatever we wanted with it. We could read it. We could loan it to a friend. We could even sell it back to a second hand store. If you were to buy a digital version of the same book, you aren't legally allowed to do that."

The control companies have over their consumers goes even beyond that. Apple's iCloud has the ability to delete your files at any time without notice. YouTube is able to keep your videos even after you delete them. At one point, Keurig coffee makers could recognize when you attempted to use a non Keurig coffee and refuse to make it. There are even some cars that can recognize the speed limit signs and force you to comply. It begs the question. Do we own our products or do they own us?

"If you can't speed in your car, you don't own it."

That was just one of the many points made during SXSW. From an "own versus lease" standpoint, John Deere is known in the community as being one of the biggest offenders.

"Today a new tractor from JohnDeere includes a dozen computer controlled based components to make it work."

Wired magazine did a long tail piece on the topic of both John Deere and General Motors. According to them, "It's John Deere's tractor, folks. You're just driving it."

"In a particularly spectacular display of corporate delusion, John Deere—the world's largest agricultural machinery maker—told the Copyright Office that farmers don't own their tractors. Because computer code snakes through the DNA of modern tractors, farmers receive "an implied license for the life of the vehicle to operate the vehicle."

That's a strong opinion, but it's one that matches up with many issues farmers across the country have faced. There have been many documented issues of crop growers being unable to plant or harvest because machines they pay money for aren't working as intended.

"Kerry Adams, a family farmer in Santa Maria, California, recently bought two transplanter machines for north of \$100,000 apiece. They broke down soon afterward, and he had to fly a factory technician out to fix them.

"Because manufacturers have copyrighted the service manuals, local mechanics can't fix modern equipment. And today's equipment — packed with sensors and electronics — is too complex to repair without them. That's a problem for farmers, who can't afford to pay the

dealer's high maintenance fees for fickle equipment."

Eventually he gave up on trying to fix them because the cost was too high. Now he has two six figure machines he can't use that are taking up space on his farm. While this topic has concerned those on this side of the debate, there are those that stand on its opposite. One SXSW attendee, a software writer, presented an alternate point of view.

"It amazes me that people are losing sleep over this. I have nightmares from the other direction."

He then discussed how a tiny, seemingly insignificant change in a bit of code could conceivably cause an entire device to not only fail, but fail dangerously. By opening the source and granting access to everyone, even those who aren't trained could manipulate how a device works. What happens if the deletion of a single piece of script causes a phone to explode on an airplane? It wouldn't be the first time a device suffered such failure on an airline.

Still, humans have tinkered with things they've owned throughout time, and mechanical changes always posed risks as well. Why should this be any different? A thoughtful question at a time when the buying process is under such scrutiny.

With DicksonOne not only do you own your devices but you also own your data, even though the software is provided as a service. Our touchscreen models can even be used as standalone data loggers without added software or with our desktop software DicksonWare. DicksonWare is a one time purchase as opposed to a monthly fee, though the feature set differs.

As a company, our goal is to work with every customer to provide the solution that best works for them. Whether that includes installation, mapping, validation, purchase or troubleshooting, that means that no transaction ever has a true end date. When every point matters you have to be there for your customers no matter the transaction; no receipt required.

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.



Panelists at SXSW's "IOT You Don't Own" discuss YODA legislation.

Terms of Service Didn't Read

ToS;DR is a browser add on that rates and labels website terms & privacy policies, from very good (Class A) to very bad (Class E). Below is a look into a few of the most popular websites.

Google Class C

- Google keeps your searches and other identifiable user information for an undefined period of time
- Google can use your content for all their existing and future services
- This service tracks you on other websites
- Google can share your personal information with other parties
- Google may stop providing services to you at any time

SoundCloud Class D

- You stay in control of your copyright
- Collected personal data used for limited purposes
- 6 weeks to review changes
- Indemnification from claims related to your content or your account
- Personal information can be disclosed in case of business transfer or insolvency

YouTube Class D

- Terms may be changed any time at their discretion, without notice to the user
- They can remove your content at any time and without prior notice
- The copyright license is broader than necessary
- Reduction of legal period for cause of action
- Deleted videos are not really deleted

Facebook No Class Yet

- Very broad copyright license on your content
- This service tracks you on other websites
- Facebook automatically shares your data with many other services
- Facebook uses your data for many purposes
- The Android app can record sound & video from your phone, at any time, without your consent

twitter No Class Yet

- Twitter deletes tracking data in 10 days and offers an opt-out
- Very broad copyright license on your content
- You can retrieve an archive of your data
- Critical changes to the terms with little user involvement
- Twitter deletes your account after 30 days. It keeps the rights on your content.

Wikipedia No Class Yet

- You publish your contributions under free licenses
- You can give comments before changes
- Wikipedia can block your account
- Wikipedia uses temporary session cookies

Amazon No Class Yet

- Terms may be changed any time at their discretion, without notice to the user
- This service tracks you on other websites
- Amazon enables third-party advertisers to target you by default
- Amazon may sell user data as part of a business transfer

There's No Reason to
Improve on the Best.
We Did it Anyway.

DSB

The newest member to the Dickson family.

Dickson's Display Loggers, one of our top annual sellers, have been fully redesigned to incorporate features from our best selling devices into non-connected units.

The logger will be able to collect all of the temperature and humidity data you've become accustomed to from Dickson's replaceable sensors. You can learn more about Replaceable Sensors on page 17.

Starting at \$199, the DSB is now available to order! Visit DicksonData.com/DSB for more info.



TEMPERATURE SENSORS STARTING AT \$110

- Single/Dual K-Thermocouple Temperature Sensor •
- Single/Dual Temperature Thermistor Sensor •
- Ambient Temperature & Humidity Sensor •
- Platinum RTD Temperature Sensor •
- Ambient Temperature Sensor •



**REPLACEABLE
SENSORS**



**UPDATED
DICKSONWARE**



**UP TO 2X THE
BATTERY LIFE**



**MORE
COMPACT DESIGN**



Introducing Legacy Uploader.

View, analyze and export your data in a 21CFR11 compliant environment. Want to share your data with others throughout the company? Then manually upload all of your downloaded data to the DicksonOne Cloud thanks to our new Legacy Uploader tool.

Get more out of DicksonWare.



Why go digital? That's easy.

DicksonWare now allows you to store and share data easily with others in your organization by uploading it to our cloud-based environmental monitoring system, DicksonOne.

For more information visit DicksonData.com/DicksonWare.



ANALYZE YOUR DATA

View your temperature monitoring data historically, graphed in detail to allow you to pull insights and recognize any excursions as they occurred.



FILE EXPORT

Not only can you view your own temperature and humidity data on your computer, but you can export it and send it to anyone, anywhere, at anytime.



VIEW YOUR DATA

Take your data with you wherever it's been uploaded. And, thanks to our new Legacy Uploader, you can save your data to the cloud to view on any connected device.

SOLUTIONS TO SUIT YOU

VALIDATION SERVICES

IQ

INSTALLATION
QUALIFICATION



TESTS

VERIFICATION OF CORRECT
EQUIPMENT INSTALLATION

ENSURES

CORRECT INSTALLATION OF
SYSTEM PER SPECS

ESTABLISHES

A BASELINE FOR EQUIPMENT

OQ

OPERATIONAL
QUALIFICATION



TESTS

VERIFICATION OF CORRECT
EQUIPMENT OPERATION

ENSURES

CORRECT OPERATION OF
SYSTEM PER SPECS

VERIFIES

SYSTEM MEETS CLAIMS FROM
PARAMETER

PQ

PERFORMANCE
QUALIFICATION



TESTS

VERIFICATION OF CORRECT
EQUIPMENT PERFORMANCE

ENSURES

CORRECT PERFORMANCE OF
SYSTEM PER SPECS

VERIFIES

SYSTEM MEETS CUSTOMER'S
INTENDED PURPOSE

Why Dickson?

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. Luckily, Dickson offers validation services for our DicksonOne and DicksonWare software customers, also including temperature controlled equipment such as refrigerators, stability chambers, freezers, walk-in chambers, and much more.

**Is your company ready for a quotation or need more information?
Contact a specialist today at 630-563-4210**



Put a friendly face to your data.

Dickson is exhibiting at a trade show near you. Whether you're new to data monitoring or a long-time friend of ours, feel free to stop by and put a face to the name of the world's widest selection of top quality instruments for your monitoring needs.

SETTING THE STANDARD

Calibration Services

Calibrations are essential to all devices that measure a variable. However, we often get the questions, “Why isn’t it accurate already?” and “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.

HOW CALIBRATION WORKS

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 standard, we adjust the sensor to align with the standard.

STEP THREE

We run through this process multiple times, adjusting the device as it is compared at multiple temperatures.

STEP FOUR

We perform a final check of one or more points, depending on the 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 little
- Choice to specify the temperature point to best reflect your application

3-POINT NIST

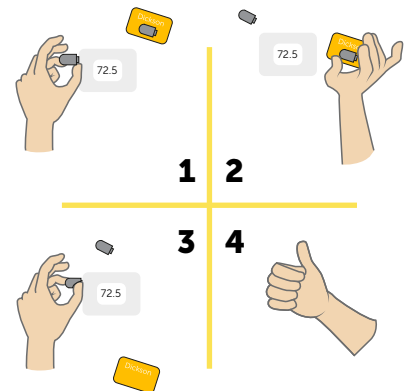
- Three-point (high, middle, and low) temperature point calibration
- Grants a larger proof of accuracy
- Choice to specify the temperature point to best reflect your application

Need help? Let us be your calibration expert. | 630-563-4210 | support@dicksondata.com

CONVENIENCE IS KEY

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.



ZERO DOWN TIME



All Dickson sensors come pre-calibrated with upgrade and certificate options.

FAST & EFFICIENT



Pull the old sensor off.
Put the new sensor on.
It's that simple.

COST-EFFECTIVE



Back up units are no longer needed. Pay for a sensor, not an extra device.

CHART RECORDERS

Want a physical readout right where you are monitoring? Our Chart Recorders have you covered. For ninety years we’ve built the best chart recorders in the business. Check out our models below.

8 and 6 Inch Models

MODEL	FEATURES	STARTING PRICE
KT6	6 Inch Temperature	\$384
KT8	8 Inch Temperature	\$436
TH6	6 Inch Temperature and Humidity	\$509
TH8	8 Inch Temperature and Humidity	\$509



4 and 3 Inch Models

MODEL	FEATURES	STARTING PRICE
SL4350	4 Inch Temperature	\$249
SL4100	4 Inch Temperature	\$249
SC367	3 Inch Temperature	\$249



DATA LOGGERS

For data loggers, information (temperature/humidity measurement and date and time) is 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 — \$119

Temperature Logger
Accuracy: $\pm 1.2^{\circ}\text{F}$, $\pm .7^{\circ}\text{C}$
Range: -10°F to 176°F , -23°C to 80°C

TP125 — \$199

Temperature & Humidity Logger
Accuracy: $\pm 0.8^{\circ}\text{F}$, $\pm .44^{\circ}\text{C}$
Range: -10°F to 176°F , -23°C to 80°C
Humidity: $\pm 2\%$ RH from 0 to 60%; $\pm 3\%$ RH from 60 to 95%

SK550 — \$699

Temperature Logger Pack of 12
Accuracy: $\pm 1.8^{\circ}\text{F}$, $\pm 1^{\circ}\text{C}$
Range: -4°F to 158°F , -20°C to 70°C

TK550 — \$999

Temperature & Humidity Logger Pack of 12
Accuracy: $\pm 1.8^{\circ}\text{F}$, $\pm 1^{\circ}\text{C}$
Range: -4°F to 158°F , -20°C to 70°C
Humidity: $\pm 2\%$ RH from 0 to 60%; $\pm 3\%$ RH from 60 to 95%

Display

SP425 — \$159

Data Logger with Large Display
Accuracy: $\pm 1.2^{\circ}\text{F}$, $\pm .7^{\circ}\text{C}$
Range: -4°F to 158°F , -20°C to 70°C

TP425 — \$249

Temperature & Humidity
Accuracy: $\pm 0.8^{\circ}\text{F}$, $\pm .44^{\circ}\text{C}$
Range: -4°F to 158°F , -20°C to 70°C
Humidity: $\pm 2\%$ RH from 0 to 60%; $\pm 3\%$ RH from 60 to 95%



High Temp Solutions

INDICATORS

HT300 Waterproof, High Temperature Data Logger — \$349

HACCP and FDA Compliant. USB Download. IP68 Rating.
Temperature Range: -40°F to 257°F , -40°C to 125°C
1 & 3 Point Calibration options available.

HT350 High Temperature Process Logger — \$349

HACCP Compliant. K-Thermocouple Probe, USB Download, and a large temperature range.
Temperature Range: -40 to 257°F (-40 to 125°C)
1 & 3 Point Calibration options available.

Instant Data Solutions

INDICATORS

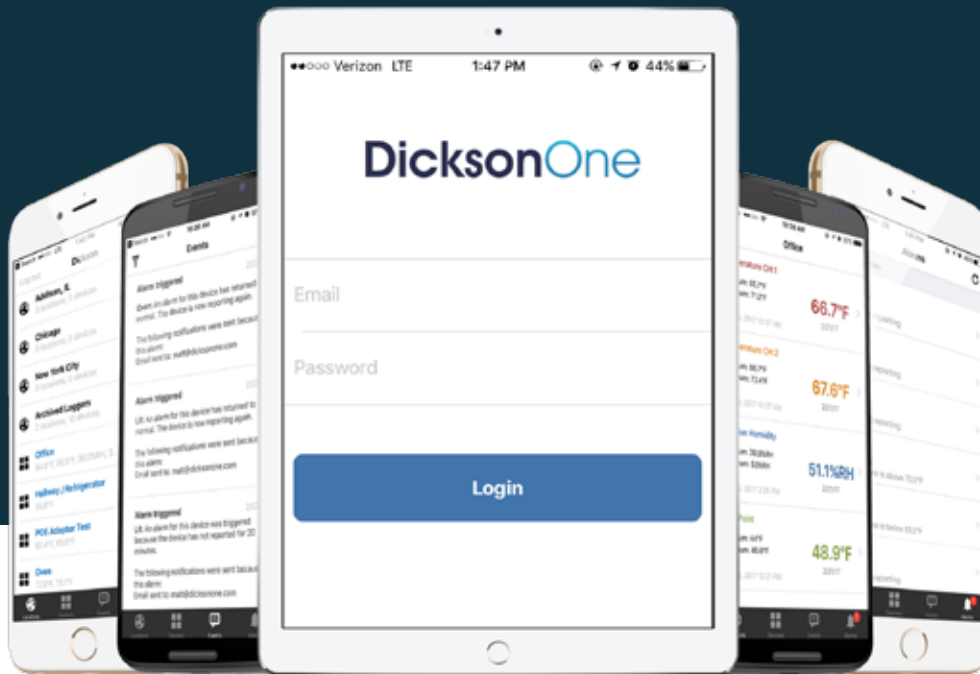
TC700 Touchscreen Handheld Indicator — \$299

Instant temperature data.
No-slip silicone cover. Battery powered.
Temperature Range: -200 to 1999°F , (-128 to 1093°C)

TH700 Touchscreen Handheld Indicator — \$299

Instant temperature/humidity data.
No-slip silicone cover. Battery powered.
Temperature Range: -40 to 185°F , (-40 to 85°C)
Humidity Range: 0 to 95% RH (non-condensing)

MILLIONS OF DATA POINTS RIGHT IN YOUR POCKET



**We know you're always on the move.
So we made sure your data could be, too.**

With the DicksonOne mobile app you can instantly access all
your data and location information in the cloud.

Anywhere. Anytime.



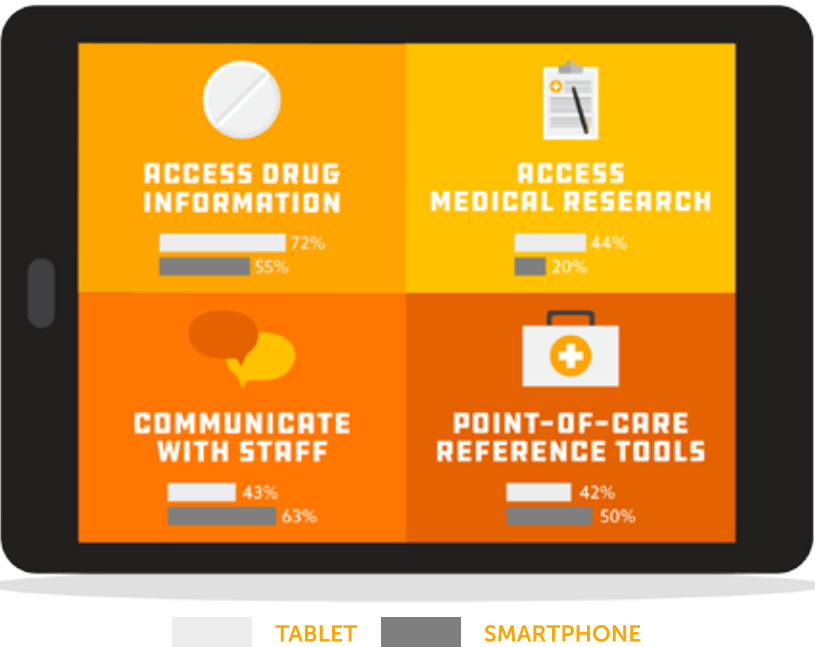


SWIPE RIGHT

HOW TELEHEALTH IS CHANGING THE FACE OF HEALTHCARE

Healthcare is a worldwide issue, and never has it been more front and center in this country than today. People all around the US have been picking up the phone to dial their local representatives to let them know where they stand in the debate over the topic and how they believe future policy should be written. More people than ever are also using their phones to call their doctors in order to find treatment.

MOBILE DEVICE USAGE IN HEALTHCARE



It's the new (okay, not so new. It's technically been around for 40 years), way patients are connecting with doctors to receive treatment. It's called telehealth and it's expected to do more than \$30 billion worth of business annually by 2020. That's a big number, but it's nowhere near the \$3.2 trillion that patient's spent on care in 2015.

Still, it represents a growing segment of Americans that would rather pick up a phone to text or dial their doctor than go in to see one in person. Why is that? At SXSW this past March a number of reasons were put on full display.

Rural Living

There are hospitals all across the country. They're in major metropolitans like New York City where New York-Presbyterian Hospital has 2,236 beds. Hospitals are also peppered throughout US suburbs. Their sizes can vary dramatically but they're available, regardless of how many beds they have. It means suburban patients are often a short trip away from a hospital bed whenever it's needed.

Compare this to Rural Hospitals where you'll not only find hospitals serving locals with as few as 25 beds, but many communities that have seen their local

hospitals close down. According to an article in USA Today, This exact issue has forced many in the small town of Richland, GA to travel 40 miles for care.

That's why the National Advisory Committee on Rural Health and Human Services has spent time exploring Telehealth in Rural America. In places where care does exist, top specialists, often, do not. Telecommuting to doctors in these types of programs provides insight otherwise unavailable to patients.

According to the committee, "... Telehealth has the potential to be an important tool in health care delivery system reform and believes the technology can help rural areas take advantage of the ACA's focus on improving access to care, enhancing quality, and reducing costs." Only time and additional experience will show us whether those thoughts are true.

The LGBTQ Community

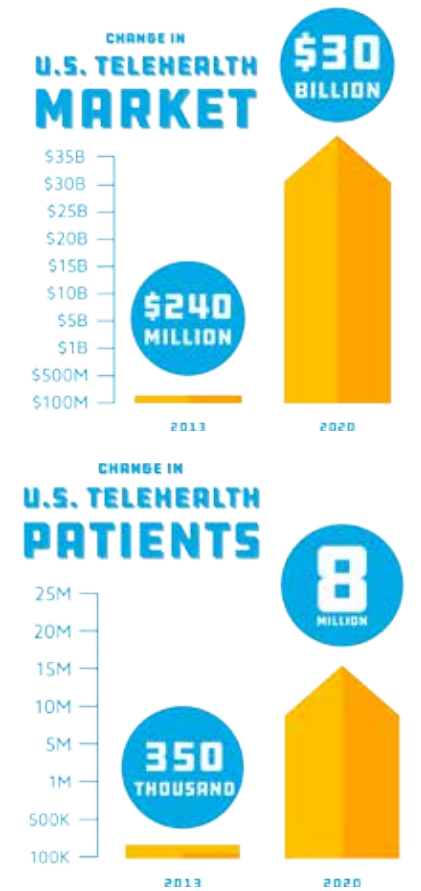
HIV may disproportionately impact segments of this community in comparison to others, but, in reality, healthcare for LGBTQ "isn't just about HIV. It's smoking, drugs, alcohol... a lot of lifestyle diseases." That is, at least, according to the LGBTQ Community

Driving Digital Health Innovations panel at SXSW. Based on their research, and experience, "95% of health issues in the community are based on lifestyle, social exclusion, etc."

Exacerbating the issue is that LGBT patients are reluctant to visit the doctor and end up being underserved. This according to not only the panel's discussion, but also American Medical News. These patients sometimes postpone care out of fears of discrimination. In order to avoid the fears, some patients have shown a willingness to travel as far as 500 miles for healthcare.

"Some patients of family physician Robert J. Winn, MD, travel more than 500 miles for routine care at the Philadelphia health center where he works. Most are transgender. Others are lesbian, gay and bisexual.

"They live in East Coast towns that stretch from upstate New York to southern Virginia. And all are looking for the same thing -- a physician who understands them."





There's enough discord that having a doctor has even been considered "Straight Privilege" for some who fear medical care. These are the reasons why telehealth has become so important to the community. Telehealth offers this community the promise of access to sympathetic personal care in a private, personalized setting to help reduce the fear of discrimination. It's why it has become the main user of a mobile app called pager, an uber like telehealth service that calls a doctor to you.

Tech Savvy Millennials

It isn't just about tech. It's about living through a recession in an age when healthcare costs are continuing to skyrocket. According to research conducted by Becker's Hospital Review, 50% of Millennials avoid seeing the doctor to save money. It means that they are Googling everything first. Whether that be "why do I have a rash?" or "How much do meds cost?", the fact

is that they are turning to technology to research and address their health issues.

This always connected group also tends to find it difficult to find time to set up an appointment, travel to a doctor, wait in a waiting room, wait through delays, get called to an office, wait longer for the doctor to see them, and then finally be treated. Telehealth removes that roadblock. These are the reasons why 74% of Millennials would prefer a virtual doctor's appointment. It's another one of the many reasons why telehealth is such an attractive treatment option and business opportunity.

Telehealth vs Traditional health

According to research conducted by Harvard Medical School, your opinion on the cost of telehealth would depend on your belief of an opportunity cost. Telehealth appointments require more of a monetary investment, thanks to an additional telehealth provider fee, but they also cost you, on average, nearly two hours less time per appointment.

Including travel time, the average doctor appointment required 121 minutes of time, whereas the average telehealth appointment was a 15 minute investment. Based on estimates by Amwell, that's the equivalent of more than \$30 in savings. That means you paid as much as 200% more in opportunity cost than you did in the form of an actual visit. It's a true representation of how time does, in fact, equal money.

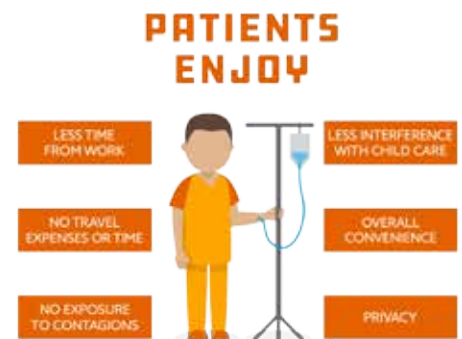
While the adoption of telehealth has exploded over the last five years, from 350,000 users to an estimated 8 million by 2018, it's important to remember that no two states define telehealth services the same. Here is an excerpt from the Center for Connected Health Policy's 2016 paper on State Telehealth Laws and Medicaid Program Policies that begins to touch on these differences.

"Although each state's laws, regulations, and Medicaid program policies differ significantly, certain trends are evident when examining the various policies. Live video Medicaid reimbursement, for example, continues to far exceed reimbursement for store-and-forward and remote patient monitoring. While there was an uptake in states

reimbursing for store and forward and remote patient monitoring (RPM) between 2013 and 2015, in recent months that number has stagnated remaining the same since our last report was issued in July 2015. Some states, however, are making progress just as others are pulling back."

Even as telehealth becomes more normalized, and as more apps like Pager find their way into society, critical monitoring will still be necessary, if not more so. The applications may however change. Instead of having to only monitor a refrigerator with vaccines in it, caregivers may need to monitor and collect data when transporting medications to patients. It's why we've continued to innovate and one of the reasons why we brought our new DSB logger to market. Just as doctors are now doing throughout the healthcare industry, when every point matters you have to be willing to answer the phone, whatever reason it rings.

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.



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