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Why Things are the Way They Are: Building on a Survey of State DOT Website Infrastructure
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WHY THINGS
ARE THE WAY THEY ARE

Building on a Survey of State DOT Website Infrastructure

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Part One: The Survey

Online survey sent to three groups

AASHTO Subcommittee on Information Systems
SLA Transportation Division
TRB Information Services Committee

Collected summer of 2015
Used definitions from academic literature to frame questions
What does DOT website infrastructure look like?

Survey Demographics

Generalizable threshold (N=45) for responses

More individuals (61) than states
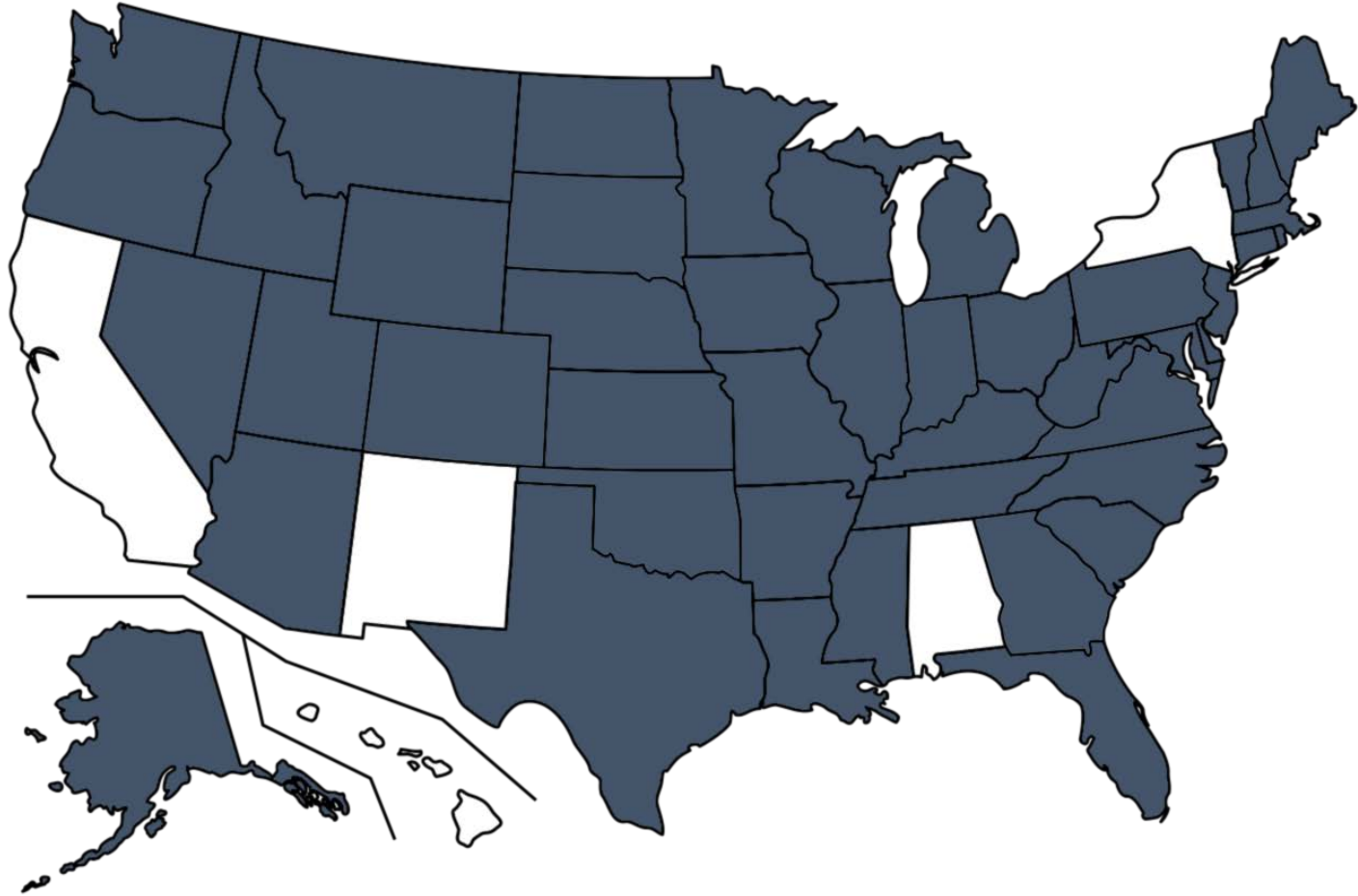Mean (13.9) is over decade of experience

Mid-sized (4,062) agencies mean by FTE
Small (4.2) mean for Web staff
Average site built in 2010
Mid-sized (6,366,683) state mean by total population
Mean ($107,116) lane mile spending

Infrastructure Summary

Most (n=28) were built in-house
Only two known states host their website in the Cloud

On-demand self-service (n=10) is rare
Vast majority reported having (n=40) broad network access
Many (n=23) pool resources
Most (n=23) infrastructure was not rapidly elastic
Majority (n=33) measured

Most DOTs take a centralized approach
State IT often involved

Infrastructure Summary

Most infrastructure deployed (n=32) privately

Even more administer infrastructure (n=37) in-house

Content usually (n=42) in-house

Part Two: Interviews

Selected maximum variation sample

Statistical testing revealed little
Ranked infrastructure variables by weighted score
Created list of states

Took into account variables like demographics

Not always available

Interviews in Fall 2015

Questions asked why Web infrastructure was adopted

Even More Interviews

Interviews in two sets (n=7, 5) until saturation
Recorded and transcribed afterward
Grounded theory

Read transcriptions
Made notes on the side and then created axial codes
Consolidated codes and re-coded

Codes from initial set described second set

Slightly revised codes and created definitions
Explained adoption causes

Data Analysis

Two coders applied codes to transcriptions
Examined set chunks of text
Inter-rater reliability

Cohen's Kappa coefficient
Tests reliability of determined constructs
Score of 0.774 good

Twelve codes total, six relating to adoption causes
Based on best-practices or not?

Interviewed Demographics

Good distribution

Slightly fewer mean FTEs (n=3,163) than country
Also fewer Web staff (n=3.5) than the national average
Roughly same age of Websites

Knowledgeable population

Mean (n=11) experience slightly less than national average
Split between executives (n=6) and managers (n=6)
Score of 0.774 was good

Goal not representation but possible causes
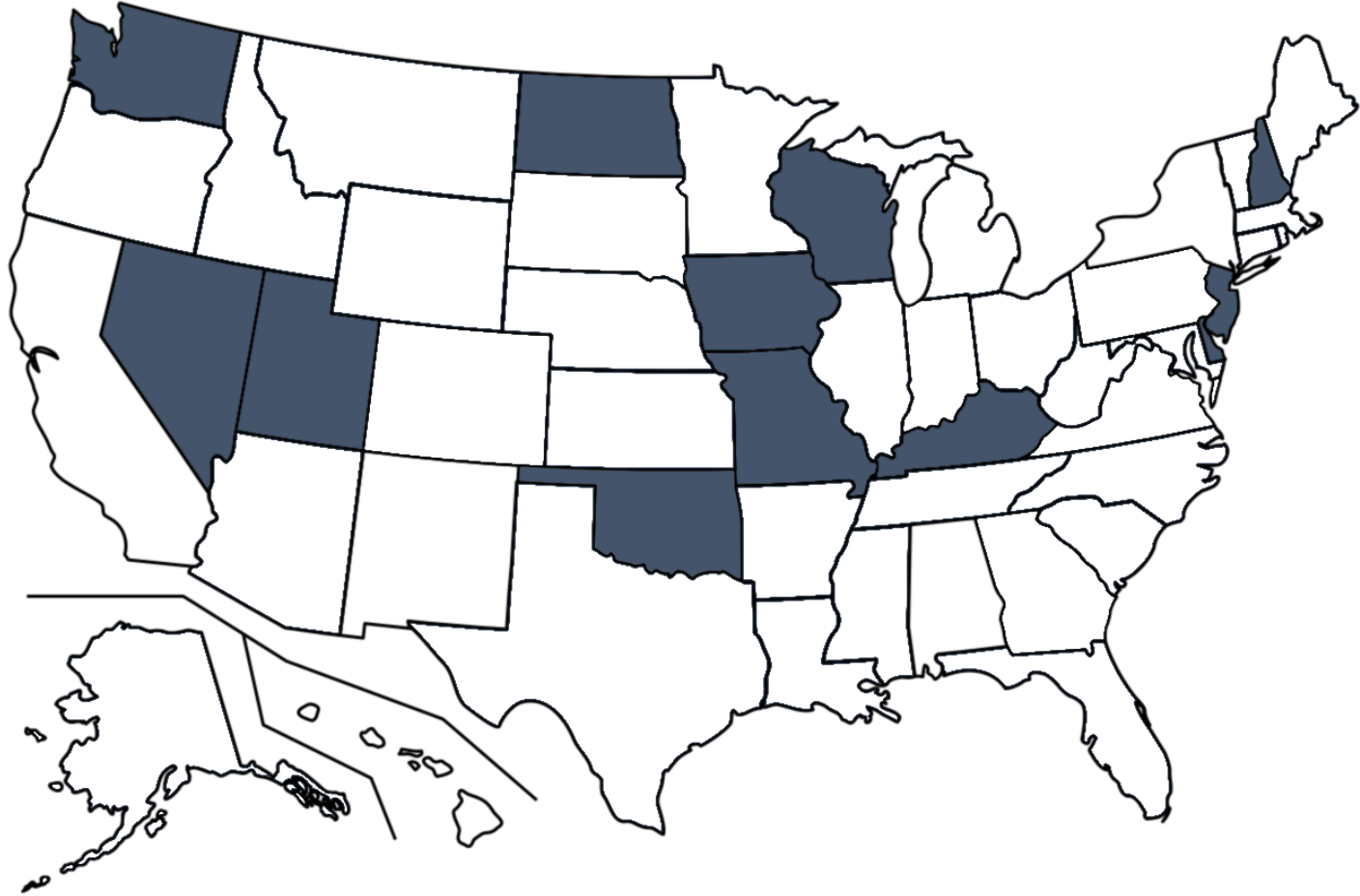
Bureaucracy and Authority

Total of 94 passages
Most common thematic passage by far

They went with the state solution. Apparently, it was the only option we had to choose from. So, we either could develop in-house, which at the time our Web programmer was not willing to change his style, or we went elsewhere and had it done. And, our only choice was with [a vendor] and they decided it was good enough for the Governor so it was good enough for us...we were in the middle of consolidating agency IT so all of our people have gone.

Something happened at DOT where our management said let's go and sign the contract without any… you know input from our IT web team and power authors… even without asking them about requirements. It was kind of rammed down our throats. Here's the statement of work with the vendor.

Maintaining our own infrastructure allows us to have that control over… you know what things we want to implement and how we do it. Having all of our staff… including the Web team… who actually isn't part of IT staff but they are there to support the Web team. It's nice to have them internally so we can talk to them directly and see what our options are.

Missions

Total of 44 passages
Second most common thematic passage

There's also a lot of push and pull between agencies that want to take it a step further and add a little more flash. Your travel and tourism people, for example. Your fish and game people. They want to have more "pizzazz" than perhaps what is generally allowed.

At the top they have a long-term vision… They focus on a broad scope of things, but as far as website functionality and requirements? You know… if you hear feedback from individuals regarding actual site requirements, needs, and wish lists it would have helped... It made the look and feel of the site similar to the state, but from an IT point of view they never asked for any requirements from us.

We get with each division and my group will build the IT portfolio for a given year. I then go to an IT steering committee. They have to prioritize their division's projects. Then we get together to look at available hours we have and say, ok, we can for the most part guarantee these projects. The one thing we are working though… is we have each of the divisions priorities… When we have competing number priorities… which one has the higher priority?

Technology

Total of 36 passages
Third most common thematic passage

As far as developing a new website? The last time we did that was in 2007. Again, the reason we built it was that OIT came to us saying they had a new site design. That required transferring all of the content to the new site. It was time-consuming.

How do you make sure your "stuff" is on all of the available platforms? That always challenges us. We have a mobile application. We have our Web presence. We are always tasked with getting it to the people in the "latest and greatest" way.

SharePoint...its architecture is different from most applications. The settings are different than most. It is a specialty. You can't just grab a software engineer off the street and ask them to administer it. It has a serious learning curve.

Resources

Total of 35 passages
Fourth most common thematic passage

Standardization is important... imagine what an administrator must deal with in trying to support all of those devices and networks. State IT does try and streamline us by saying that they will only support Windows… only support… Adobe Contribute for your webpages, because, you know, they don't have the manpower to support every product, platform, and piece of software.

But, the problem is, there is not enough funding for us to staff-up and pay for, um… kind of with soiled budgets, there is not enough funding to meet everyone's needs, and we rely on consultants more.

It's probably due to the availability of the hosting resources and the legacy that we created over the years. As well as the maturation of service offerings and the levels that we need.

The one thing with the state IT they don't have a budget. It's a Peter paying Paul system. We pay for their services and they use it that way. They sometimes nickel and dime you...It would be nice if they had their own budget and then… but this way… I mean they have to account for everything.

Knowledge and Expertise

Total of 24 passages
Fifth most common thematic passage

We rely on IT to tell us if something is ADA compliant or not. He said that a lot of new websites aren't. They're beautiful, but we have to make sure everyone can use them. They need to be visible and viewable by everyone.

It relates to business requests. IT has always suffered from people making decisions in IT without an IT background. And I don't know when that problem will ever be solved. That is an age-old problem.

One of the significant challenges we have is where a department will go to a consultant and, say, we have a need for a program. They have a little money to help, but we doesn't necessarily have the internal staffing to support building their software. So, they go to the consultants. They will come to us with a product that is in a format we cannot use and it looks nothing like our brand.

There are instances where one person who really knew one system and grew up it… he's good in another area and they move him to do other work. The DOT loses expertise in those areas.

Cultural and Personal Factors

Total of 7 passages

Sixth most common thematic passage

One thing I will honestly say is that my boss and I are different. I'm a former officer in the cavalry so I'm used to risk taking. I tend to manage my risks. He is different. His attitude is, "let's go for it and deal with it as it happens." I have the go ahead to be aggressive in testing new concepts, but I am the one actually slowing it down to maintain our reputation and reduce preventable mistakes.

You also wind up… "wrestling" for lack of a better word with the "not invented here" syndrome.

Where it really hinders me is when opinions come into play. You have to arrange meetings and form committees. In one sense it would be easier if there was one Dictator to rule the Web, but in another when you work with more people you get a variety of ideas and information.

Some Takeaways

Not that many causes of adoption
Success by agencies with completely different philosophies
Involving third-parties comes with consequences

More autonomy
More feedback from agency stakeholders
Contracting-out can work **if** agency retains control

Thank You!

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