University of Nebraska–Lincoln Extension Technology 2020 Plan
July 15, 2014

The Charge

In the fall of 2013, Dr. Charles Hibberd, Dean and Director of University of Nebraska−Lincoln Extension, announced the need for a Technology 2020 Plan to the organization. This plan is to set the course for how the organization will, in future, identify, adopt and apply information technologies to complement its educational mission.

This plan focuses on, 1) engaging and reaching customers who can benefit from extension's subject matter content and programs; 2) developing and implementing a vision to achieve a competitive advantage for UNL Extension in the development and delivery of research-based extension programming; and 3) providing the tools and professional development needed to enable the organization and its employees to develop and deliver transformative education grounded in excellence and scholarship.

The Process

A Technology 2020 Leadership Team was established following the 2013 annual conference to organize the planning process and to develop the plan. A process was developed to gather data; identify UNL Extension goals, objectives, critical success factors, priorities and gaps; and develop action plans and related milestones. Team members were:
- ○ Kathleen Lodl, Nebraska 4-H, Associate Dean;
- ○ Richard Koelsch, Agricultural Program, Associate Dean;
- ○ Wayne Moore, Associate Dean;
- ○ David Varner, Associate Director, Southeast Research and Extension Center;
- ○ Dan Cotton, Director, Integrated Technologies.

A Technology 2020 Planning Survey was written and distributed in April 2014. Data were collected from 183 extension faculty and staff. The survey provided a good baseline for technology adoption and use, and network literacy within the organization.

A Technology 2020 Planning Retreat was held May 1-2, 2014, in the East Campus Union. Dr. Ronald Roeber, Account Technology Strategist, Microsoft, was the retreat facilitator. The twenty-six retreat participants included members of the Technology 2020 Leadership Team, extension educators and specialists, extension administrative support personnel, and representatives from industry and partnering organizations. Please see Appendix A for detailed information collected from the Technology 2020 Planning Retreat.

The Plan was drafted throughout May and June 2014.
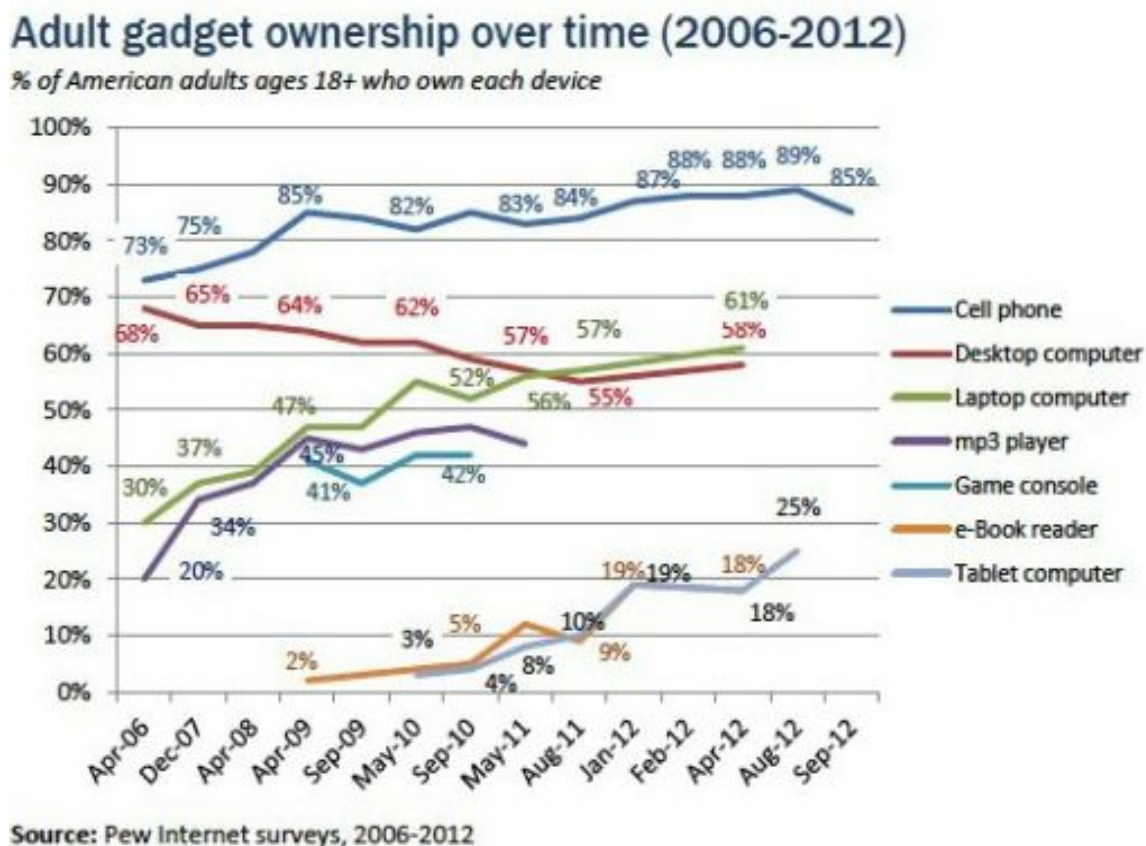
The Technology 2020 Survey: What We Learned
The Technology 2020 Survey provided important insights into the adoption and use of information technology in UNL Extension, and into the challenges we face moving forward. Information was collected from 183 participants. Following is a summary of key findings.

- Internet service is generally available. Educators prefer using tablets and smartphones; however, such equipment is not significantly used in program development and delivery.
- Generally, people reported data being backed up, software upgraded, and data security being maintained.
- People are proficient using common applications; few use project management, graphic, video production or gaming software.
- There is some use of cloud applications for data backup and storage, scheduling, word processing (Google Docs), scheduling of meetings, etc.; there is little use of other popular cloud applications, which may translate to little or no use of collaboration applications throughout the organization.
- Fifty percent report using survey software, but there is little use of clickers, mobile assessment, online library resources, blogs, etc.
- Video conferencing is used, but use may track to webinar participation rather than producing educational programs to reach end users.
- There is little use of learning management software (LMS) to deliver web-based modules and/or courses; there is more interest and use by specialists.
- There is limited use of social media in program development and delivery, which translates to not being in online places where conversations are taking place.
- Less than one-third of people report using Web page management tools, electronic newsletters, multimedia publications, YouTube videos, decision support tools, digital diagnostic tools, or Ask an Expert services.
- Nearly 60% of people report they do not use analytics to measure program access and content use.
- Approximately 58% of people receive training four times or less per year, while 47% prefer to receive training in a face-to-face format.
- People are interested in learning about video production (19.7%), apps (13.3), social media (12.1%), cloud applications (10.4%), and teaching on the web using best practices (9.8%).
- Seventy-five percent report they do not curate content.
- Fifty-three percent of respondents indicated they are not supportive of certification being integrated into promotion and tenure processes; however, 57.8% in the age range of 36-50 and 57.4% in the age range of 18-35 are supportive.

Technology 2020 Drivers and Disruptive Shifts
For 100 years, UNL Extension has used technologies to support its educational mission. Over the last 30 years, the most impactful technologies introduced have been the Internet and World Wide Web. New business models have emerged, new companies formed, existing companies able to leverage the network in positive ways have survived and gained advantage, while those that were slow to recognize the impact of these new technologies, have been negatively affected, and in some cases ceased to exist.

In the last 10 years, we have moved from what industry has called Web 1.0 - static web pages - to Web 2.0, with user-generated content and social media. Now, with the proliferation of mobile services and the advent of wearable computing (e.g., Google Glass, etc.), we find ourselves in an era of the *Internet of Things*. According to Gartner, a leading information technology research and advisory company, by 2020, we can expect to see as many as 26 billion devices connected to the network. In such a BYOD (bring-your-own-device) world, with people connecting multiple devices, organizations should realize it's not about tweaking the business plan, it's about adopting new models and processes. The following chart describes the status of device ownership over time. Most striking is the rate of adoption of mobile devices. The question for UNL Extension to consider is: What content and programs we should place online, and in what formats?

Adult gadget ownership over time (2006-2012)
% of American adults ages 18+ who own each device


Source: Pew Internet surveys, 2006-2012

When people look for something online they tend to *Google* it, which is to say they search for it using a search engine (e.g., Google, Bing, Yahoo, etc.), unless they know the website and link directly to it. This makes being discoverable critical, which requires implementing good search engine optimization strategies, e.g., including the right keywords, writing good headlines, adding links to related information, etc.

The following chart describes important UNL Extension websites and how people are accessing them. Traffic channel definitions are as follows:
- **organic**: visitors referred by an unpaid search engine listing, e.g., Google search
- **referral**: visitors referred by links on other websites, social media

- **none/direct**: visitors who visited the site by typing the URL directly into the browser. Also, can refer to visitors who clicked on links from their bookmarks/favorites; untagged (untracked) links within emails; or links from documents that don't include tracking variables (e.g., .pdf, .docx, etc.)
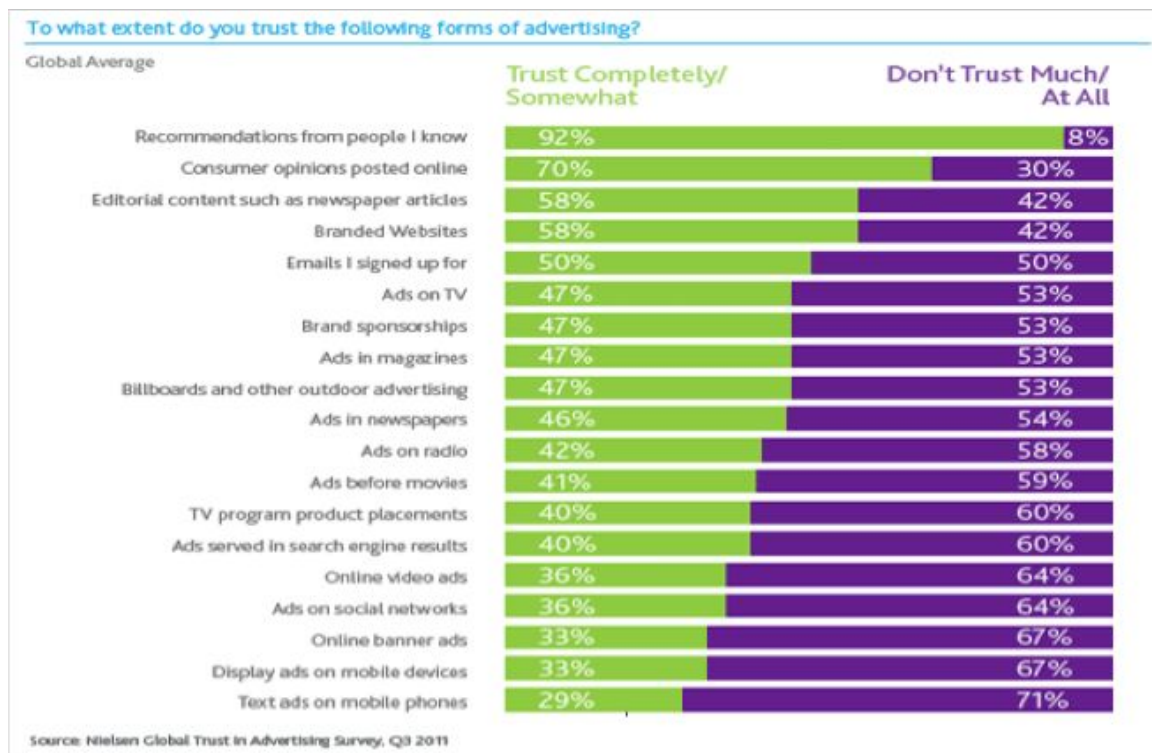
UNL Extension Website Traffic Channels
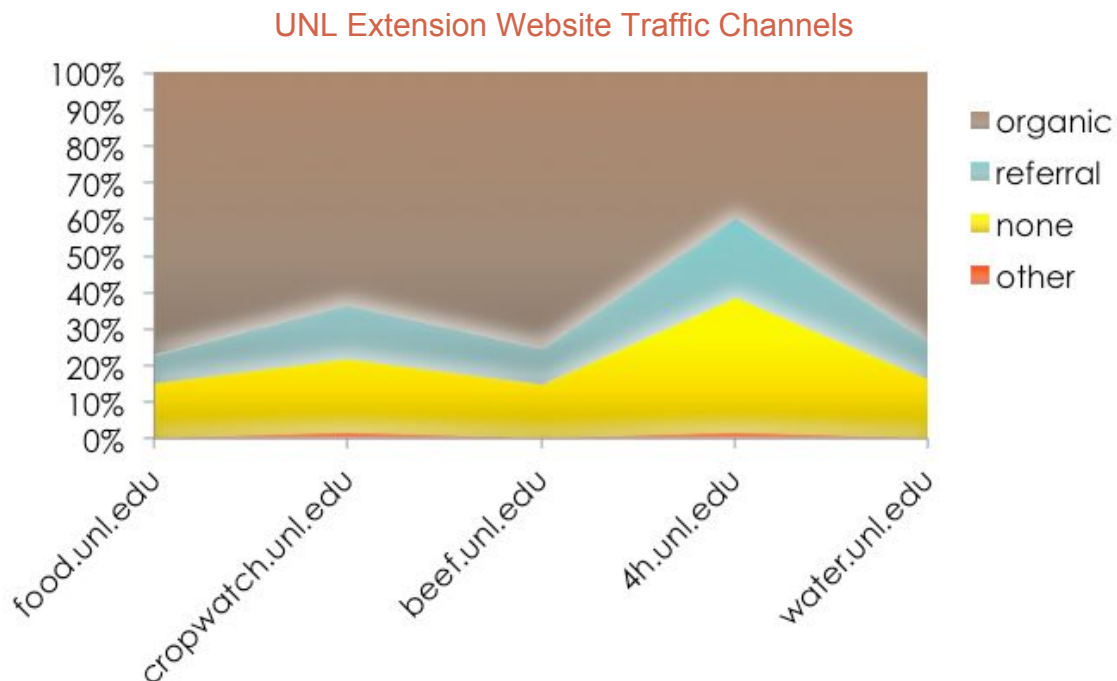
Social media lets people come together around common interests and/or problems, while working to form levels of trust, reciprocity and cooperation. The following chart represents the growth of social networks. Today, companies are crowdsourcing problems, soliciting new ideas that often lead to new products and services, and becoming educated in subject matter areas that interest them. It's critical extension join these conversations and activities because not doing so will limit our brand, engagement and reputation.

Social networking site use by age group, 2005-2013
% of internet users in each age group who use social networking sites, over time
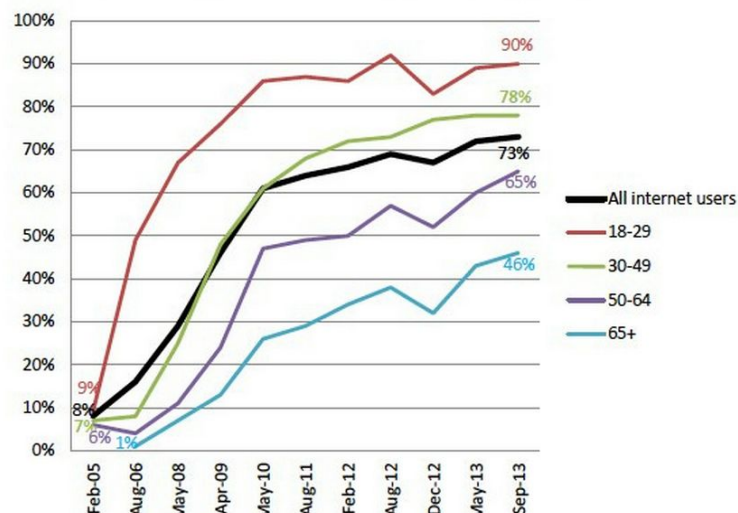
With the growth of social media, people are not just looking to websites for information and resources, they are choosing to communicate and build relationships with others. As the following shows, the most trusted recommendation comes from a friend.

To what extent do you trust the following forms of advertising?

Global Average

	Trust Completely/ Somewhat	Don't Trust Much/ At All
Recommendations from people I know	92%	8%
Consumer opinions posted online	70%	30%
Editorial content such as newspaper articles	58%	42%
Branded Websites	58%	42%
Emails I signed up for	50%	50%
Ads on TV	47%	53%
Brand sponsorships	47%	53%
Ads in magazines	47%	53%
Billboards and other outdoor advertising	47%	53%
Ads in newspapers	46%	54%
Ads on radio	42%	58%
Ads before movies	41%	59%
TV program product placements	40%	60%
Ads served in search engine results	40%	60%
Online video ads	36%	64%
Ads on social networks	36%	64%
Online banner ads	33%	67%
Display ads on mobile devices	33%	67%
Text ads on mobile phones	29%	71%

Source: Nielsen Global Trust in Advertising Survey, Q3 2011

Harold Jarche, a workforce transformation expert, suggests, "work is learning and learning is the work." Certainly, this would be true for UNL Extension because of the high value we place on learning. However, we may have certain challenges depending upon how one views participation in professional development training, and interest in certification being integrated into promotion and tenure processes in the organization. Also, Jarche refers to "personal knowledge management" as being online to "seek, sense and share." He suggests that through learning networks we find others with common interests, and through interactions with others, we learn, develop new perspectives, help others to learn, and build reputation and identity.

According to the Institute of the Future in their *"Future Work Skills 2020"* report, people are beginning to experience a number of disruptive shifts that promise to impact our future. UNL Extension will need to anticipate these and other societal disruptions in order to meet audience needs:

- **extreme longevity**: increasing global lifespans change the nature of careers and learning;
- **rise of smart machines and systems**: workplace automation nudges human workers out of rote, repetitive tasks;
- **computational world**: massive increases in sensors and processing power make the world a programmable system;
- **new media ecology**: new communication tools require new media literacies beyond text
- **superstructed organizations**: social technologies drive new forms of production and value creation;

- **globally connected world**: increased global interconnectivity puts diversity and adaptability at the center of organizational operations.

While UNL Extension has a talented and enabled workforce, are we prepared to meet the challenges such disruptive shifts represent? Is our culture such that we embrace change easily, can we pivot quickly, learn new skills and work collaboratively with others in learning networks? Following are 10 skills the Institute of the Future suggests our workforce will need to have in the future:

- **sense-making**: ability to determine the deeper meaning or significance of what is being expressed;
- **social intelligence**: ability to connect to others in a deep and direct way, to sense and stimulate reactions and desired interactions;
- **novel and adaptive thinking**: proficiency at thinking and coming up with solutions and responses beyond that which is rote or rule-based;
- **cross-cultural competency**: ability to operate in different cultural settings;
- **computational thinking**: ability to translate vast amounts of data into abstract concepts and to understand data-based reasoning;
- **new media literacy**: ability to critically assess and develop content that uses new media forms, and to leverage these media for persuasive communication;
- **transdisciplinarity**: literacy in and ability to understand concepts across multiple disciplines;
- **design mindset**: ability to represent and develop tasks and work processes for desired outcomes;
- **cognitive load management**: ability to discriminate and filter information for importance, and to understand how to maximize cognitive functioning using a variety of tools and techniques;
- **virtual collaboration**: ability to work productively, drive engagement, and demonstrate presence as a member of a virtual team.

The nature of learning and education will continue to be impacted due to the growing number of connective and mobile technologies. We can expect to see value creation emerge through knowledge flows where educational resources are widely available, learning opportunities are abundant and people can opt in and out of them at their convenience. This transformation raises many challenges for an education organization such as UNL Extension. Key will be building learning partnerships with others, the construction of modular content, pursuit of open licensing, and strategic marketing.

The following map from the Institute of the Future describes important attributes of the emerging learning landscape sure to affect us.
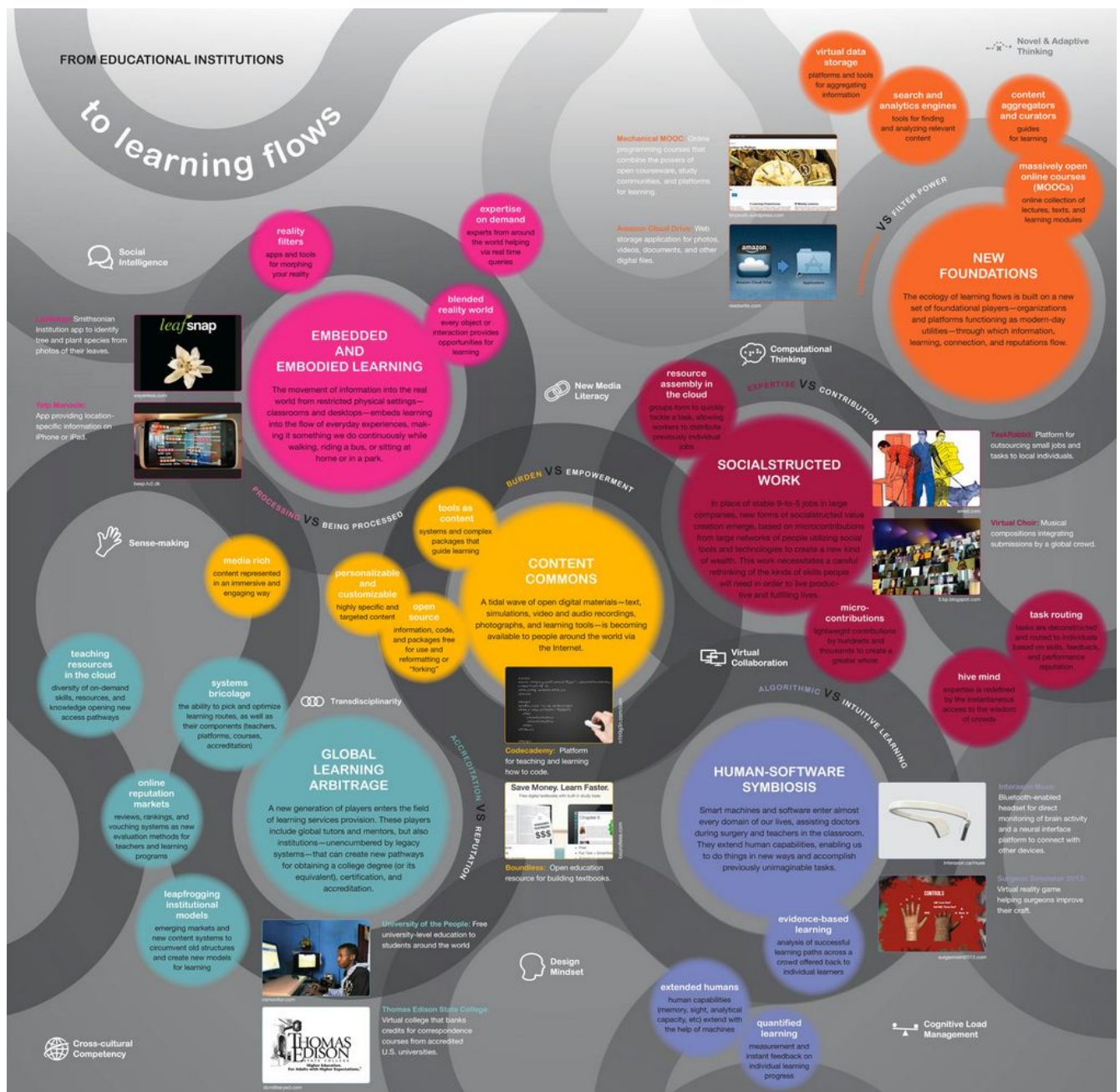
Cloud computing offers efficiencies that enable companies to reduce costs and increase flexibility, while at the same time opening up new and important opportunities for collaboration.

Currently, the University of Nebraska uses cloud technologies to support file backup and storage, website hosting, email, etc. At the same time, many people use public cloud applications to develop and manage documents, graphics, videos, slides, project management, scheduling, and more. UNL Extension can benefit greatly from using such applications to carry their office with them at all times.

Cloud Computing
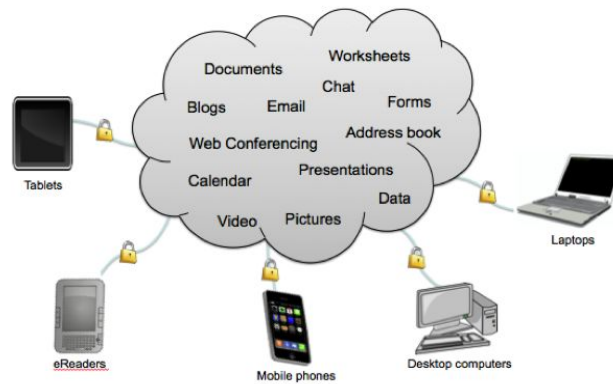
UNL Extension is a member of the University of Nebraska network, which regularly upgrades bandwidth to a number of county offices, research and extension centers, and other University facilities, as resources and cost permit. Today, the Network supports fiber to all campuses, 100 mbps or greater connections to Research and Extension Centers, and 3-100 mbps connections in approximately one-third of county offices. Moving forward, attention will be given to upgrading county connections in certain offices to ensure they have the necessary bandwidth to support important organizational applications and services. The network includes many partners. As the number of connected and mobile devices grow, so too will the need for bandwidth. Having appropriate bandwidth is critical to UNL Extension.
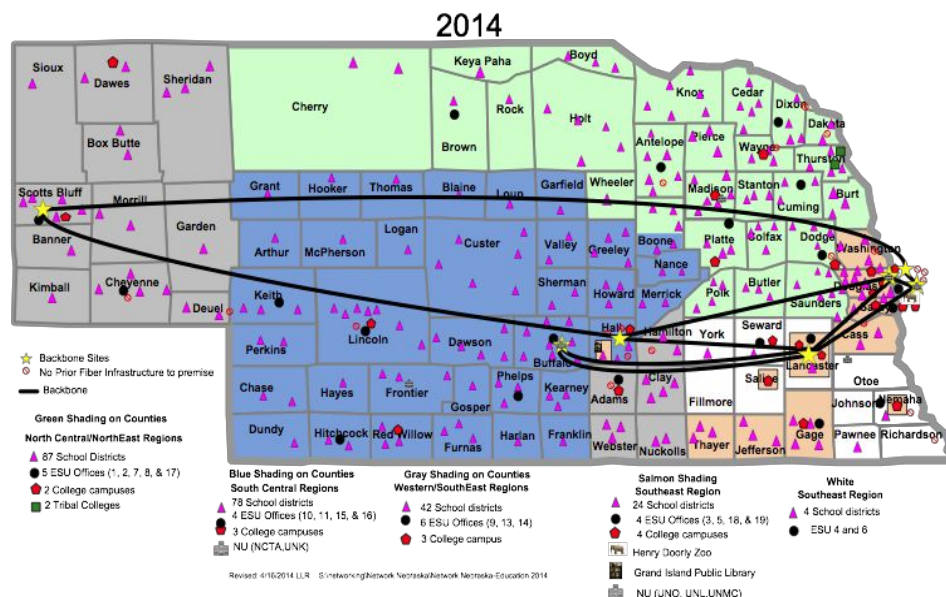
Today, we are in the midst of a big data revolution; however, the revolution isn't as much about the amount of data being collected as it is about having the computing power and algorithms to do something with it. We need to use analytics to observe key patterns and behaviors that can potentially improve our decision-making. A familiar use of big data would be recommendation

engines used to promote certain resources to an individual based on their interests and pattern of use. We could be analyzing social media texts looking for key messages and interests of target audiences. There are endless big data possibilities associated with any and all of our priority program areas. The following infographic from IBM highlights important big data concepts and strategies.
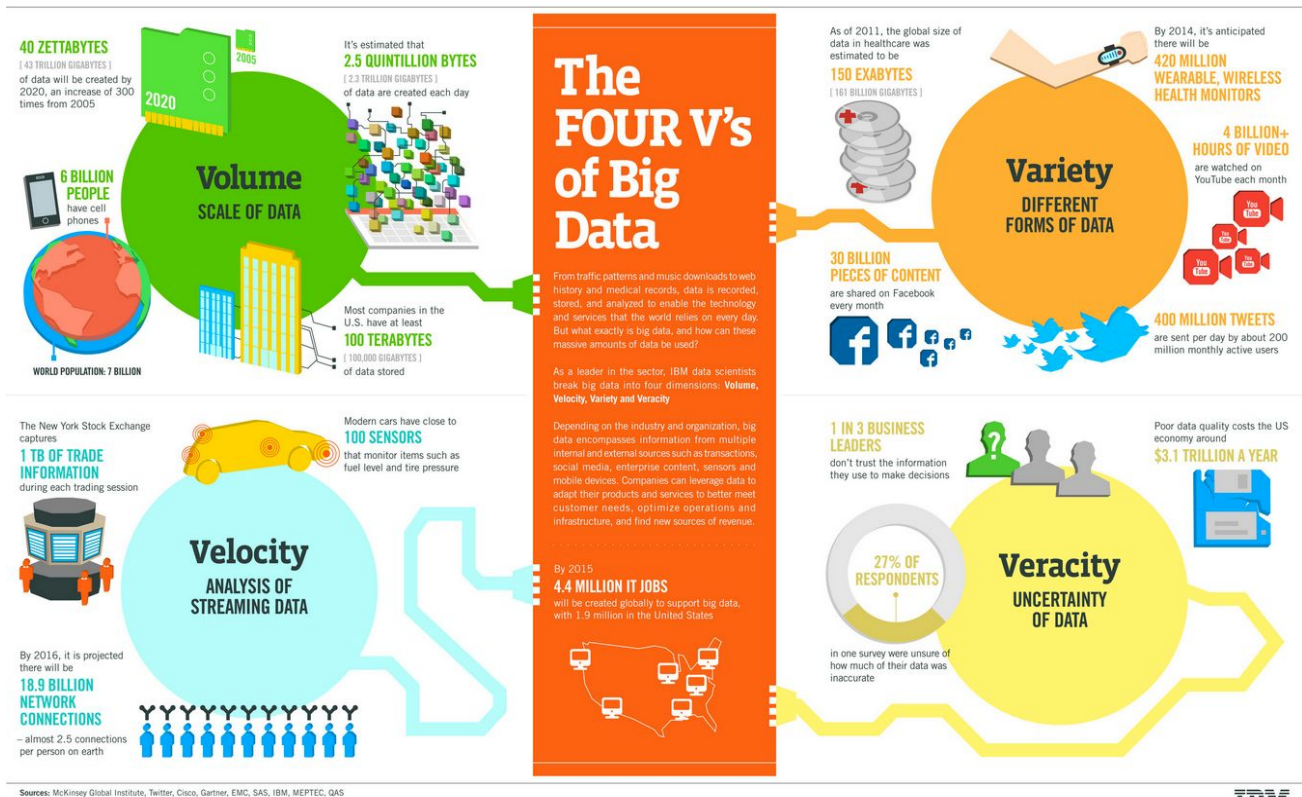
In addition, the following are common resources for measuring and evaluating social media. Some are free, while others are at a cost. It would be these types of tools that could provide each Action Team a metrics dashboard to inform decisions and improve content and program management.
- *Facebook*: Insights
- *Twitter*: Tweetreach, Hootsuite, Tweepsmap, Buffer, Mentionmapp
- *Pinterest*: Tailwind
- *Multiplatform*: Sproutsocial, SimplyMeasured, SumAll, Google Analytics

The drivers described in the last few pages help to communicate **why** having a Technology 2020 Plan is important. There are many other drivers, such as augmented reality; virtual reality; wearable technologies; recognition and certification software; MOOCs (Massive Online Open Courses); digital currencies; mapping and location-based technologies that are important for us to consider, as well.

If UNL Extension is to thrive in 2020 and beyond as a modern educational system, these drivers and others sure to come, represent the type of technologies and support services the organization will require. Just as critical will be learning to partner with others throughout the Cooperative Extension System whose charge we share. Perhaps this quote from Eric Hoffer, American moral

and social philosopher, sums up the situation well:

> *"In times of change learners inherit the earth; while the learned find themselves beautifully equipped to deal with a world that no longer exists."*

Our Strategic Intent

UNL Extension is committed to serving the educational needs of stakeholders. We will do this through learning networks and engaging them with the best and most relevant information and educational programming we can provide. We will strive to assist audiences with the challenges they face anytime and anywhere through conversation, access to readily accessible information and educational products, and expertise when they seek to make informed and educated decisions.

Our key strengths include:
- **being a learner-centric organization**: We are committed to engaging, understanding, and collaborating with our audiences to ensure that information and educational programs are relevant and responsive to their needs.
- **a trusted reputation**: We will provide access to unbiased, research-based information and programs developed by a highly talented and qualified workforce.
- **a commitment to community-based learning**: We value participation in learning networks organized around subject matter strengths and the interests of our audiences. We are committed to working with partners and learners in environments that value co-learning.

UNL Extension helps Nebraskans transform knowledge into "know how" by helping them make decisions that advance themselves, their businesses, communities and families. As such, we will seek to:
- **develop high quality educational content and programs**: UNL Extension will support an attractive and easy-to-use interface that fosters collaboration and meets the needs of audiences. By committing to the co-creation of content, we can attract more customers, cultivate a more informed workforce and enhance the relevancy of our educational information and programs.
- **increase our visibility**: By providing relevant, responsive and timely access to content, programs and services, we will increase the visibility of UNL Extension and the University of Nebraska. We will work to increase content discoverability and engage audiences through collaborative learning.
- **focus on local value**: Through participation in Action Teams and learning networks, we will share programmatic loads with colleagues, increase the value of content and programs, and extend the life of our educational resources resulting in organizational efficiencies and cost savings.
- **reach customers**: UNL Extension will expand audience reach by providing greater access and availability to ourselves and our resources through the use of networks, learning communities, search engines and social media.

Recognizing the changing nature and expectations of Web-based learning, we need to be creative and innovative in our approaches to developing high quality content and programs, engaging learners and measuring learning outcomes. We will seek partnerships with others to grow and

strengthen the value of our offerings.

We are committed to a culture of creativity and innovation to meet the ever-increasing educational demands of our audiences. This calls for organizational models that are new, different and sometimes a departure from the organization we have been in the past.   We will share best practices as we seek to be more competitive in the knowledge marketplace.

In the future, we need to:
- **describe impacts***:* Describe what success looks like and develop the metrics that assess how we are progressing. We will need metrics that prove UNL Extension is delivering value to our stakeholders.
- **develop exciting and scalable learning products and services***:* Increase the pace, flow and richness of new content and programs to increase audience satisfaction, while at the same time being cost-effective. This will require a capable technical infrastructure with a commitment to apply new technologies to support extension's educational mission.
- **curate knowledge**: Serve the educational needs of audiences by becoming knowledge curators quick to identify, interpret and share relevant and credible information. We will learn to seek, sense and share as members of learning networks committed to collaborative learning.

Our commitment is to make sure UNL Extension remains a modern, relevant and responsive educational organization well into the future. Today, we live in a digital world; therefore, it's critical we work in new and different ways to remain an educational leader in Nebraska.

Action Plans
The following Action Plans were identified through the Strategic Planning process and represent the highest priorities of the organization at this time. These are:
- engage, reach and develop relationships with learners through learning networks;
- develop high quality research-based content and programs;
- provide educational resources in the formats of people's choosing;
- make content and programs easy to find;
- help people acquire the skills and strategies to work effectively in a digital world;
- provide the technical support needed for people to achieve their educational mission;
- collect, analyze and use data to appropriately influence our relationships with learners.

Following the organizational discussion of this plan and approval by the Extension Leadership Team, final edits will be made and the plan shared with UNL Extension for implementation. Action plans will be supplemented with milestones and timelines upon which extension can act, react, and build over the coming years and months. Execution of milestones are expected to begin in late summer.

Action Plan 1: Learner Centric
We are a customer-centric and open organization delivering just-in-time learning experiences rooted in credible research-based information. Our strategy is to "go to where the people are" to engage and reach them in very rich and meaningful ways. We use these learning partnerships to help us develop and deliver high quality educational programs that impact people's lives in

positive ways. People know us as an organization that listens and addresses their needs, and demonstrates educational excellence in innovative and creative ways. Peers regard us as leaders in the educational marketplace. We develop and deliver transformative education derived from research-based findings. We produce high quality content and programs designed in modular formats and tailored for delivery over any network device anytime and anyplace. The content and programs we develop are based on organizational program priorities. We use audience data and feedback to prepare content and to deliver it in the formats of people's choosing using carefully designed communication strategies and campaigns. We develop and deliver resources using common data standards designed to ensure the highest levels of discoverability and access. Here is what the Technology 2020 Team envisions for UNL Extension in the future.

Engage and Reach Our Audiences

1. We will transition from a "paper first" to a "digital (and mobile) first" publishing strategy. Our entire approach will evolve in how we compose and organize our content for display on any Internet device. We live in a BYOD world and we need to present ourselves and the resources we generate in the formats of people's choosing.
2. Our communication and information approach in the future will be campaign-driven, based on what we are trying to accomplish. Social media and mobile marketing campaigns will track to the newest research-based information, program priorities, key messages and target audiences. Increasingly, decision-making needs to be driven by learner analytics and appropriate needs assessment.
3. We will use a multi-channel approach to engage and reach audiences. In "going to where the people are" we need to be active individually and organizationally in social media. We will use high traffic learning spaces (i.e., Wikipedia, Youtube, Facebook, Twitter, Google+. etc.) to share information and links to relevant content and programs. Doing so can help drive traffic to UNL Extension resources and increase reputation.
4. Counties will use social media to communicate information about local resources and activities. They should transition from an approach of developing and supporting a website to using social media to engage local learners. This is not to say they should not maintain Web resources with original local content, but over time their presence should transition to the more social Web.
5. To be where the people are we will participate in learning networks to listen to, engage and reach people, while fostering a spirit of learner collaboration. Harold Jarche describes it this way..."this new form of networked learning is an individual, disciplined process by which we make sense of information, observations and ideas. In the past it may have been keeping a journal, writing letters or having conversations. These are still valid, but with digital media we can add context by categorizing, commenting or even remixing it. We can also store digital media for easy retrieval. This new wave of learning gives us more ways to connect with others in our learning." Learning networks should positively impact needs analysis, content and program development, while establishing relationships/connections with others. We need to listen to and participate in conversations centered on our program interests and expertise. Learning networks will include Action Teams and others with similar content interests i.e., be regional, national or international in scope. The key is to listen to and engage with learners, so that everyone benefits from the conversation and experience of one another. What we learn in those spaces can further impact the quality of the resources we develop and their availability. We will share stories of our experiences working in learning networks. We

should describe how we are working differently and how our participation is resulting in tangible impacts. We need to share these stories internally and with stakeholders.

Valued Content and Programs

1. We will focus on developing high quality Web resources versus websites. Data suggests people tend to search for information or link to a resource versus going directly to a site. Each resource needs to present an intelligent "wrapper" featuring links to resources and services people have indicated are important to them and we consider to be priority resources.
2. The learning spaces (sites) that extension deems most important, i.e., extension.unl.edu, food.unl.edu, cropwatch. unl.edu, beef.unl.edu, water.unl.edu, byf.unl.edu, 4H.unl.edu, etc., need to support discovery, conversation (ask an expert), learning, curation (sense-making), user-generated content and audience engagement around the latest scientific knowledge. Based on successful social media and leading industry examples, we need to incorporate user-generated content and recommendation engines to push resources to people when dealing with emerging issues and learning opportunities. We need to identify ourselves and our expertise to augment our brand identity.
3. Action Teams (i.e., educators and specialists) will regularly write and post important and timely educational resources, i.e., blog posts, articles, videos, etc., that can be shared on extension.unl.edu and various resource areas supported by Action Teams, i.e., water, food, beef, etc. Doing so will result in a regular flow of fresh and timely content.
4. We will use open standards and formats, e.g., World Wide Web Consortium's definition. Interoperability and scalability are critical for working in the semantic web.
5. We will employ social tagging (i.e., folksonomy) that makes sense for extension and our audiences.
6. Any web resource we develop will be rooted in organizational goals and objectives and considered to be a high priority when assigning value-added resources to develop them. Such services are expensive; therefore, we need to be wise stewards of them.
7. We will apply current search engine optimization (SEO) strategies to increase search discoverability and access. We need to understand and learn to play by the Google Rules if we are to be successful, rules that can be disruptive to long-established publishing standards we may use today. This includes changing our approach to composing headlines, paragraphs, and organizing thoughts, etc. Why is Wikipedia a top ten website? In addition to the very nature and amount of content available, their discoverability tracks to the organization of content, e.g., links within a page.
8. We will eliminate low-performing content identified using analytics. Low-performing content negatively impacts search discoverability. Removing such content may result in reallocating resources to produce more highly valued content and programs.
9. Action Teams will develop a portfolio of mobile location-based applications/services that add value to core programming priorities. Revenue from the sale of apps should be used to help support app development and support. Cost suggests that future application development should be scalable and sustainable, i.e., focus on the creation of browser-based (device agnostic Web applications).
10. UNL Extension will plan to purchase and begin working with Google Glass and other wearable technologies, as appropriate. Others in the Cooperative Extension System, including eXtension, are making similar plans and we will plan to collaborate with them in the development of relevant applications.

11. Action Teams will develop a portfolio of high-quality learning modules/courses/certifications with proceeds from fee-based offerings used to add value to support the development of their module/course/certification portfolios. This denotes the need to develop an appropriate business plan(s) to support online-based education (certification) programming.

12. Action Teams will augment their portfolios by including and/or linking to relevant subject matter resources provided by key partners, including eXtension, USDA-NIFA, other state extension programs. For instance, eXtension Communities of Practice/Learning Networks produce content and programs that can be relevant for Nebraska audiences. Linkages to such resources can add depth and breadth to programming areas and can be branded to UNL Extension.

13. Action Teams will work with teaching faculty in CASNR, the College of Education and Human Sciences (CEHS) and others at UNL as appropriate, to identify a course(s) around which to develop a MOOC. Because Coursera is a learning management system, conversion from an existing Moodle course is doable. Extension and CASNR would benefit from the experience of offering a MOOC, while promoting each other's brand and helping to shape related strategies.

Action Plan 2: Effective Workforce

Extension is a high-performing knowledge organization equipped with the tools and services (equipment and network) needed to effectively engage and reach audiences. Extension administration is committed to extension being a 21st century knowledge organization. Extension's employees will use a personal knowledge management (PKM) approach to develop the individual skills and behaviors to be a 21st century knowledge worker. They are expected to be competent in engaging and reaching audiences using appropriate social media strategies; collaborating with others (internally and externally) to develop and deliver high-quality educational resources; curating information; applying up-to-date user data analytics and market indicators into resource development and delivery decision-making; teaching online using best practices and market technologies; and cultivating a culture of innovation, creativity and risk taking. They are able to contribute and participate effectively in learning networks organized around their subject matter expertise and interests. These networks include not only themselves, but other UNL Extension professionals, extension professionals from other institutions (eXtension), partners with an interest in the subject matter and clientele interested in learning and contributing. We encourage collaborative learning because it leads to better program responses and support of our audiences. Administration has integrated these behavioral expectations into hiring and recruitment guidelines.

1. Extension needs to frame its expectations regarding faculty and staff learning, using and applying technology to engage audiences, and developing and delivering content and programs. We need to recognize the disruptive shifts described in the Institute of the Future's report, *"Future Work Skills 2020"* and help develop the type of workforce we will need to have in the future. Once this is described and shared, faculty and staff will be encouraged to develop a personalized learning plan.

2. Professional development is critical to extension being able to conduct its educational mission and promote a culture of openness, innovation and learning. The culture of our professional development program should be grounded in the phrase *give a person a fish and you feed that person for a day; teach a person to fish and you feed that person for a lifetime.* We will assist staff in acquiring the necessary skills and confidence to be self-reliant with regard to developing subject matter content and programs. Key focus

areas will include, but not be limited to using and applying new technologies to:
   a. engage and reach audiences;
   b. develop and deliver content and programs;
   c. use social media, content and program development tools and services, collaboration tools, mobile location-based applications/services, teaching and learning technologies, data analytics, cloud technologies, and more;
   d. design effective learning applications;
   e. collaborate virtually with others;
   f. help people understand the ways to apply open licenses to our educational resources (i.e., Creative Commons);
   g. teach and mentor online;
   h. become information curators;
   i. work effectively in learning networks and to evaluate their effectiveness;
   j. access and use data analytics to drive educational product and service development.
3. Programs will be offered as a mix of virtually enabled synchronous and asynchronous programs, as well as face-to-face offerings. The program should include internal (e.g., extension, University, eXtension) and external speakers to provide various training programs. We will form teams to tackle various topics using a train-the-trainer model.
4. We will incentivize professional development through innovation and professional development grant programs.
5. Professional development programs will be organized into a well-defined curriculum that may include multiple learning sessions. When a learner completes the program and can demonstrate new abilities we should badge them to recognize their accomplishments.
6. We will incorporate professional development certification into promotion and tenure processes to recognize and reward people for the badges they earn and/or for other forms of learner accomplishment. Doing so would contribute to a culture that values innovation, creativity, learning, and working differently.
7. Writing and publishing in appropriate new formats, and evidence of online audience engagement and reach will be incorporated into annual evaluations. Faculty need the opportunity to describe how they are working differently if such activities are expected.
8. All video-based educational programs will be recorded and listed on eXtension's Learn system. In turn, we will use eXtension Learn sessions, as appropriate. State Extension partners will develop and deliver educational programs on topics that can benefit UNL Extension. Such collaboration can benefit both UNL Extension and the Cooperative Extension System.
9. Extension will engage in perpetual conversation about new and emerging technologies and their potential use and application in the organization. For instance, the Southeast District has established the Next Generation Extension blog, which is now being extended to the entire organization. Such engagement will be fostered and grown, as should participation in other learning spaces organized around the technology interests of staff.
10. Extension will use LinkedIn to help facilitate recruitment and hiring processes. It can also serve as a platform for extension faculty and staff to identify themselves professionally to others.

Action Plan 3: Innovative and adaptive Infrastructure

We use technologies and strategies that help establish us as a leader in the education marketplace. We have access to value-added skills and services including, but not limited to, digital communications and marketing, instructional/multimedia design, application development, and decision data/evaluation support as needed. The University of Nebraska provides network bandwidth and cloud services to support our efforts to communicate, develop and deliver high quality educational resources. Our educational products are developed using industry standard metadata and search engine optimization standards. We develop and deploy mobile applications using a business plan that focuses on controlling costs, promoting scalability and sustainability, and using current technical standards.

1. It is critical extension has access to important value-added services to support organizational goals. Such services are a prerequisite for successfully executing this plan. Sources may include a mix of internal and external resources.

2. Value-added services need to be allocated to the organization's highest priority projects. Such projects need to use a Movement of Media process that includes Extension Administration, which will be responsible for allocating resources based on established program priorities. Extension will need to be careful that such allocation is not seen as creating hierarchy, but as ensuring a more prompt and standards-based approach toward adding value to organizational priorities.

3. Extension will develop an intranet to support internal communications, collaboration and educational resource development. This extension hybrid cloud will include University of Nebraska and public cloud applications since they are used by the audiences we serve. We will transition from email to other platforms to support communications, collaboration, content and program development, file sharing, data storage, project management, and more. Intranet strategies should interface seamlessly with our Internet strategies. We need to "walk the talk."

4. An Extension/CASNR Collaborative Repository should be established to host and share educational objects, i.e., graphics, published content and programs, applications, video, etc. The Repository may be developed using a mix of public and private cloud applications. Policies need to be drafted related to adding and drawing from the Repository. Such a shared space would be very helpful for sharing and repackaging modules into credit and/or non-credit offerings. We will use open technologies so learning objects cannot only be used internally, but externally, as well. eXtension offers access to certain tools and services that should be considered.

5. Extension needs to identify a long-term content management system to support Web resource development. UNL Extension employs a content management system (CMS) called Liferay to support website development for IANR. UNL-ITS supports Drupal and while plans were made to transition to Drupal, these efforts stalled due to transitional costs and a lack of Drupal support. However, in the future we expect to develop new websites using UNL's Drupal configuration. Care should be taken to transition existing websites to Drupal due to cost and available resources. Appropriate support will be critical to ensure performance, stability and ease of use by content providers.

6. Extension will have access to a learner-centric and well-supported learning management system(s) that supports student enrollment and payment services. Today, that would include Moodle; however, additional tools and strategies will need to be identified to provide optimal and future learner support. Such resources are critical to supporting Action Team priorities.

7. Extension needs to identify and use an event registration and fee payment system to support educational services statewide.

8. Individuals and teams will submit grant applications to various agencies to support efforts to work differently on program priorities. Grant/contract opportunities can lead to new program collaborations and technologies that will support program goals and objectives.
9. Extension needs access to software development providers who can accommodate the application development needs of the organization. Organizational guidelines, processes and policies for such development need to be developed, as well (i.e., documented standards in Web resource and mobile application development, data organization and storage, collaboration, etc.)
10. Extension should partner with Agricultural Research and CASNR to establish a research and development (R&D) function to explore, test and pilot new technologies that can add value to extension work and activities. For instance, new mobile technologies (e.g., wearables, drones, sensors, etc.) will soon pervade the market and we need strategies for how best to use and implement them. The same can be said about other technologies and their introduction into the marketplace. We will need to be flexible and nimble in order to take advantage of new technologies and their applications. We should always be trying to push the envelope whenever possible.
11. Extension needs to work closely with the University of Nebraska Computer Services Network (UNCSN) and UNL Information Technology Services (ITS) to ensure adequate network connections and appropriate bandwidth is provided to all statewide extension offices. Adequate bandwidth should be defined by the types of educational services extension provides to audiences and the organization's ability to operate as a member of the University of Nebraska cloud (network). In counties deemed to have less than adequate bandwidth, extension will need to actively pursue bandwidth enhancements.
12. Extension district information technology technicians play an important role in supporting the technology needs of the organization. They will join an information technology team charged with helping to lead and coordinate the implementation of information technology strategies statewide. Other members of the team will include representatives from EdMedia, ITS, and others such as UNCSN, as appropriate.
13. Action Teams will include value-added technologists and communication/marketing strategists to help design appropriate social media strategies and priority-based educational content and programs. They can serve as coaches and trainers, and help teams identify and broker expertise needed on a project basis.
14. Technology 2020 implementation will involve the following:
    ○ Implementation Teams including extension faculty, staff, communications and information technology professionals will take ownership of each Technology 2020 Action Plan. Their charge will be to develop milestones to be executed every 12-14 months.
    ○ The Technology 2020 Leadership Team will aggregate and publish the milestones generated by each Implementation Team and be responsible for evaluating the overall effectiveness of the Technology 2020 Plan, thus ensuring it remain a true framework for change.
    ○ Annually, participants in the Technology 2020 planning retreat (May 1-2, 2014) will review the Plan to ensure it is updated to take advantage of new technologies and strategies within within the knowledge marketplace.

Action Plan 4: Accountable and Results Driven

UNL Extension embraces a culture of data to guide the effectiveness of audience engagement and reach, the development and delivery of educational resources, and the culture of the organization. Decisions are based on knowing as much as possible about extension's learners, how they learn, their beliefs and attitudes, the way they access information and educational programs, and how they use extension's resources. Data drives many of our decisions and actions as an educational system. We are accountable to our stakeholders, so we take great care to measure program impacts and to report them to decision makers and partners. We use data to help "skate to where the puck is going to be." We need to:

1. Support an organizational culture of evaluation and provide the necessary resources (i.e., strategies and personnel) to organize, lead and report to the organization key findings;
2. Establish performance metrics the organization believes are credible and relevant; measure if we are being successful at helping extension people change the way we work; effectively engaging and reaching online audiences; and evaluating the benefits of working in learning networks;
3. Capture user analytics to understand audience behavior, how people are coming to our resources (i.e., referrals, search, device, location, etc.), what resources are used and those that are not, the impact our programs are having, and more.
4. People will have access to decision data dashboards providing access to the latest analytics (Web resources, social media, etc.). Such information will be critical in helping to make content and program decisions.

Potential Priorities

It's important for the Implementation Teams to conduct their charge and the following priorities represent key areas to be addressed immediately. These are offered as a means to begin the conversation:

1. inventory current content products and formats, develop campaign strategies for existing and new content products and services, identify new content formats, as appropriate;
2. develop professional development programs that focus on developing personal knowledge management - learning plans;
3. begin building a collaborative repository in cooperation with CASNR;
4. address infrastructure requirements for Moodle, content management, and statewide connectivity;
5. begin developing analytics and dashboards for Action Teams.