Economic Impact Committee – Nov. 19 2015

Bruce Gjovig, CEO, UND Center for Innovation Foundation, BRIC Committee, supporter of innovators and entrepreneurs who start new industry clusters like UAS and data. Our tech incubator hosts 8 UAS companies with employees plus 11 virtual UAS companies who will have employees as contracts and customers come forth. The UAS cluster is off to a good start, now for the data cluster.

1. Big "**thank you**" to Legislature for seed funding for UAS industry. Because of your appropriations, our BRIC committee was able to fund securing 1 of 6 **FAA UAS Test Sites**, nation's first UAS Tech Park – **Grand Sky** with **Northrop Grumman** and **General Atomics** building their international training centers here. They are the GM and Ford of the UAS industry and are magnets for other UAS companies. UAS – systems.... ND rapidly becoming leader in UAS commercial market using UAS for precision ag, energy industry inspections, first responders and more. Because of state funding the GFAFB will be the first runway in the nation to support commercial flights of Unmanned aircraft as soon as the **Joint Use Agreement** is signed between the air force and GF County. Thank you for believing and investing in the UAS industry, diversifying our state economy with a high tech industry.
2. **Big data is already big**, will be much bigger with the use of drones. Another huge opportunity before you – to become most welcome state for the **data industry relating to UAS** operations which will rapidly be flooded with data. AG and Energy are already are *swimming in sensors, drowning in data, but starved for useful, actionable info.* **Policy, new technologies and investment** will soon allow us to better analyze, use and disseminate data and we need to plan for that new opportunity. Legislature has opportunity to set the policies in place to get in front of this data onslaught, and new technologies on the horizon.
3. Legislature already passed **HB 1089** - strong legislation last session to make ND more attractive to private, co-location data centers providing a tax exemption on equipment for the first four data centers in the state. + seed funding for a **HPC initiative** at Grand Sky that you will hear more about from Josh Riedy and Tom Swoyer.
4. **ND has significant UAS assets already** as our Grand Forks AFB hosts the **GH** mission, part of the **Predator** mission for **ANG** and a predator mission for the **CBP** to inspect and protect our northern border. UND launched the **first UAS major** in the nation and is now building a $22 M UAS research and training facility across the street – Robin Hall. Police and Sheriff's dept have UAS assets and so will fire depts and state agencies. Farmers already are using UAS to inspect their fields for stress as oil and utility are starting to use drones to safely and cost effectively inspect and monitor pipelines, transmission lines, wind power blades, and other structures. Soon there will be thousands of drones in the state, and that is a tremendous asset but also a challenge to manage.
5. Just a week ago a **hunter in Walsh County** was missing 3 days while 400 volunteers were on foot and used boats, ATVs, and a couple of drones to find him, hopefully alive. They did find him a ¼ mile from his overturned ATV in a slough surrounded by cattails and brush. A fleet of drones - both public and private - may *have been able to find him faster and easier from the air. UAS assets will be a major source of* Search & Rescue for missing children and

adults in the future. How can we coordinate those federal, state, local and private assets and have a common place for data be stored and analyzed, assembled and utilized smartly?

6. The **Casselton train derailment,** explosion and oil fire 2 years ago was a real challenge for the local first responders to assess what the situation was and how to attack it. Drone assets – both public and private – could have been an important emergency response tool. There are many natural disasters and emergencies where UAS assets and the data they generate can be very useful in a fast, smart response…but no one would suggest we are fully coordinated and communicating across all public and private sectors
7. The **study language** for your committee asked to study issues related to a **Civilian Ground Center** – a central repository - for processing first responder data for many kinds of sensors and platforms as well as cell phones and internet service from local, state and federal levels – *and may I add private sources.* Soon private drone assets and even data assets will far exceed public sector sources, a valuable resource in times of emergency and crisis.
8. A **Civilian Ground Center, or common data center**, is an essential tool for being a common data repository, for smart data analytics and evaluation site, and common dissemination source to first responders whether they be local, state or federal or civilian assisted operations like search and rescue. What can the legislature do to encourage public agencies to participate, collaborate, and work with the private sector in a public private partnership? What policies, infrastructure and investments need to be addressed?
9. **Smart Policy** is needed to anticipate the big data and UAS assets that are heading our way. Key issues that have come up in my work with the Center and on the BRIC committee are:
    i. **Data privacy** – keeping private info private to avoid govt intrusion or invading private space. Healthcare, finance and insurance industries seem to address the privacy issue well. What can we learn for drone data privacy?
    ii. **Cybersecurity** – keeping data secure away from those who should not have it. What technologies do we need to encourage so that data links remain secure when flying drones
    iii. **Data ownership** – who owns the data, and the assembly or aggregation of data?
    iv. **Sharing data** – when and as needed for specific reasons
    v. **Backup data** – making sure it is fully redundant system but also avoid duplication of costs that are not necessary
    vi. **Enabling public/private partnerships** in emergencies and disasters and share advanced technology
    vii. Enable public/private partnerships to **demonstrate new technologies** coming from the private sector.
    viii. Allow **private sector management** of public data centers for better and cost effective. NDUS data center is privately managed to bring that specialized expertise to the operations.
    ix. How might the private sector have **access to public data** to solve problems? Can this be an income source to sustain operations?
    x. Do we have **sufficient communication infrastructure** for statewide data collection and dissemination?

xi. How can we **leverage existing resources**? Technology is advancing so fast govt cannot keep up with the investment in innovation. How can policy anticipate technology advances? Innovation in data analytics is coming soon to filter out the data not needed to focus on useful data.

10. From an economic development and industry standpoint, please keep in mind some values that should guide smart policy:
    i. Policy should **enable not stifle innovation**, allowing flexibility for future technologies
    ii. Have a **integrated framework and communication** to keep up with changes in technology
    iii. **Enable private/public partnerships** to allow rapid adoption of new technology, know how, to leverage public investments, and to utilize significant private assets and talent. There is a tendency in govt to want to cut out the private sector and control all matters in time of emergencies, crisis, and natural disasters. Resist that temptation. Play nice together.
    iv. Have **trusted 3rd Party Oversight of Govt Data** to assure privacy, make sure data is secure, and to be able to audit for compliance.
11. How might ND become one of the best states to capture the data industry related to the drone industry? AS we have done with the UAS industry itself. How can we become the most coordinated state for disaster and emergency response? Civilian Ground Center is part of the answer.
12. A key resource person was not able to be here today, **Jeff Thorsteinson**, a 1982 EE UND graduate who is Chief Security Officer for Involta data centers. They have 12 data centers in MN, IA, OH, ID and AZ and he has been a valuable resource for us. He prepared testimony for today which I will hand out now. He has identified more than 20 emergency response scenarios where drone assets would be of high value.