HXGN RADIO

[PODCAST]: Future of Surveying

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Welcome to HxGN Radio. This is your host Monica Miller Rodgers. Today's podcast is brought to you by Leica Geosystems. Revolutionising the world in measurement and survey for nearly 200 hundred years, Leica Geosystems creates complete reality capture solutions for professionals across the planet. Known for premium products and innovative solution development, professionals in a diverse mix of industries trust Leica Geosystems for all their geospatial needs. With precise and accurate instruments, sophisticated software and trusted services Leica Geosystems delivers value everyday to those shaping the future of our world. In today's episode we are talking to Nikolas Smilovsky who is the mapping department manager at BPG Designs in Arizona, USA.

MR: Thank you for joining us today Nikolas**.**

NM: Thank you.

MR: Let's start by telling our listeners a little bit about BPG Designs.

NM: BPG Designs is a 16-year-old company and based out of Phoenix, Arizona. We are a telecommunications and utility turnkey provider. In the company we have four main departments. We have the mapping and surveying. We have the engineering department and construction and network telecommunications. We say turnkey solution provider because we really want to take the customer from the beginning of a project all the way to the end, but not even to the end of the project but continuing beyond the implementation of the project into the facility management of the project or the management after the construction. So the mapping division we're usually the first to go in. We want to collect all the different measurements, maps, positions, assets, inventories. We then process, extract and give that data over to our engineers, the engineers then take that, create intuitive either 2D or 3D design implementation plans and permits for different cities municipalities or whatever the customer may need. We literally then will do the construction of the development. So depending on what we're building whether it's a fiber optic line to a building or managing a data center. The construction department will literally build that infrastructure out. Then lastly, we have the technologies group focusing on more of what we call vertical construction, so the internal networks inside of a building. Your CAT5 cables, your server racks, cabinets, things like that. So again BPG Designs turnkey solution, we want to provide our customer with anything and everything associated with the telecommunications and utilities industry.

MR: Well that certainly sounds like there's a lot going on at BPG Designs, and along with being the mapping department manager you're also a PhD student. So tell me what is it like trying to balance a work life and a student life?

NM: Easier said than done at times. Luckily I have a great group of people under me at BPG so my work like is relatively simple. I would also say having a family that supports both. I have a very loving wife that has prompted me to go back and further my education. I will say if you're going back to school especially in a PhD or a masters or a graduate level program and you're working, usually I would recommend trying to find something where you're meshing the two. So you're gaining benefits from class and your work life, and your work life is giving you real world experience that impacts your studies. So finding a topic that integrates the two makes things a little bit easier, specifically I've chosen the topic of cognitive mapping or spatial cognition. So all day every day I eat, sleep, dream geospatial technologies. I leave the work place and I literally go right into that same environment again. So it helps that flow in between the two different settings.

MR: Certainly great advice for anyone who is trying to balance those two worlds, and on top of being a mapping director, a student, having a family you are also overseeing the internships for undergraduate students in the Mesa Community College Geospatial Technology program. So can you talk a little bit about what your responsibilities are in that role?

NM: Absolutely, so I've always had a little bit of an infinity to teaching to leading to help aspiring students to learn their potential. So throughout the different years I've worked at different universities whether it was Arizona State University or a university of Arizona, Mesa Community College, I find that each of the different universities sort of takes a different approach on how they want to bring students into the geospatial world. Specifically, Mesa Community College does a great job because of the community college system. Bringing in students say right out of high school that might not have had aspirations to be a doctor or a lawyer or something like that. So I think it's great that more on a technical side almost apprenticeship, a tool, a trade almost. So the Mesa Community College will literally sync up with local high schools to bring students from shop classes and things like that into the program. On the flip side, I think it does a really great job finding people already in the industry or in industries that are peripheral to the geospatial technology. So let's say you've got an engineer or somebody like a front desk

clerk that's been accepting maps at the city for the last ten years and they want to expand their career and actually get into the creation of the maps. So we have people later on in life coming back to the program to supplement what they already know, two different ways that the program adjusts and finds students.

MR: That's a great description of these two different playing fields, we'll say, of students who are coming into this program. So what are the biggest challenges that are facing this group of students?

NM: Well I definitely think there's a challenge here with the world of what we call "survey". While the geospatial technologies I believe is exponentially growing and you can see that when you look at things like Google or the Leica systems or things like driverless cars and remote sensing technologies and UAVs and drones. The geospatial technology is literally pun intended is taking off like UAVs. However, on the flip side in the survey world we don't see the push anymore from the high school, from the lower grades that this a true profession. So unfortunately for some reason there's been a gap in that supply chain of students so to speak. So 30 years ago the survey profession was very prevalent and you could go to school and they would tell you that if you liked math and you liked being outside you could a surveyor. Unfortunately if you ask your typical high school student in the United States right now they might not even know what the profession of survey is. So I think the challenge we have is disseminating that there is still a profession out there that if you are strong in math and you like cartography and you like being outside or you like interacting with technology here is this industry that people can join. So again I believe it's just that message of surveyors, a message that surveying is a profession.

MR: You're absolutely correct to this lack of interest that we're seeing with students and young people going into the surveying profession which is a bit sad considering the United States and the Founding Fathers were actually surveyors. What in your opinion can the industry be doing to better support or push for more young people to be coming into the profession?

NM: That's a great question. I think kind of a cross pollination or an inner disciplinary approach. Some of the geospatial professions, as I've mentioned, have done a very good job marketing themselves. We see a rise of what we call GIS or geographical information systems or sciences. You see that it is promoting very, very well. Same with BIM, building information modeling or management, we see this promotion of this concept, this industry taking off. However, what we don't talk about is the survey component that really is the true measurements to both of those divisions. You don't create a BIM model without having a surveyor, whether the surveyor is using an HDS Leica laser scanner or some type of RTK GPS. Same with GIS, the authoritative data that ingests into these systems comes from surveyors. So by cross pollinating, by looking at it inner disciplinary really getting the individual geospatial communities to start talking, to start helping each other out. We should all be kind of one big happy family instead of us being siloed 9:30 off and you know there's just bad juju, so to speak, going on where surveyors don't like GIS people and for some reason GIS at times don't like surveyors. I've literally heard the acronym from surveyors in the past GIS stands for get it surveyed. Well, instead of infighting we really should be promoting a "Hey, we're all here to explore the geospatial sciences, spatial context, how things are measured. Whether you're looking at it in a database to determine spatial correlation or you're trying to figure out is this my property or not." We're all in it together and I think by promoting each other I believe that's probably the best route to raise awareness to the survey profession.

MR: Great insight there Nikolas. On another topic, what is it that the students should be focusing on? What skills do you think they will need in the years coming to be successful in this profession?

NM: Yeah, another great question. I've said this to several of my students throughout the years: The ability to wear multiple hats. I think with today's technology and our global interconnected world when students get out onto the workforce, the students that are better prepared to jump into different positions at any given moment

usually will get the job. So what do I mean by that? Literally don't be so centric in your job that if you are a surveyor, don't be close-minded to doing say office surveying like behind the computer or the CAD drawing or the drafting associated with it. If you're a GIS person don't be so centric in your database analysis that you don't see the merit and correctly collecting positions out in the field. So again it's being open-minded to all the different technologies and sciences involved with the geospatial community, being able to wear those different hats. Again if you can sit down and you can program one day, you can go out in the field the next day, you can join a biology crew the following day or you can sit and do cartography on Friday., being able to wear multiple hats throughout the week really helps younger students. I would also mention a lot of times students come out of school and they go onto Monster or Indeed or some job search and they type in surveying or they type in GIS, and when you do that, it limits your query or your search to only a few jobs with that literally in the job posting. However, there are a lot of jobs out there that utilise the skill sets from surveyors and geospatial professionals in their job. So for an example, environmental scientist that go out and map desert tortoise habitats could utilise a surveyor. So opening up your job search to again the peripheral or the things connected to the spatial community I think would help a lot of these students.

MR: Absolutely and we're seeing such a connected society today where surveying skills are being used in such a wide array of applications. Nikolas, this has been great insight and advice both for today's professional and tomorrow's professional. Thank you so much for being here today and sharing that with us.

NM: The pleasure is all mine.

MR: To our listeners you can learn more about BPG Designs at www.bpgdesigns.com. Tune into more episodes from HxGN Radio on iTunes, SoundCloud or Stitcher Radio. Thank you for listening.

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