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GIS Community Survey Report

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Introduction

Usually, industry-related reports display the market. The GIS Community Survey is the first **people-centered research** in GIS. We are very grateful to all participants from different countries who contributed to GIS Community Research by Aspectum!

During these months we have reached out to more than 5000 specialists from EMEA, North America, and Asia Pacific working with data to help businesses make informed decisions.

Their contribution will help us to dive into:

- GIS specialists at work
- Current challenges
- The present and futures of the software
- Needs and disruption factors

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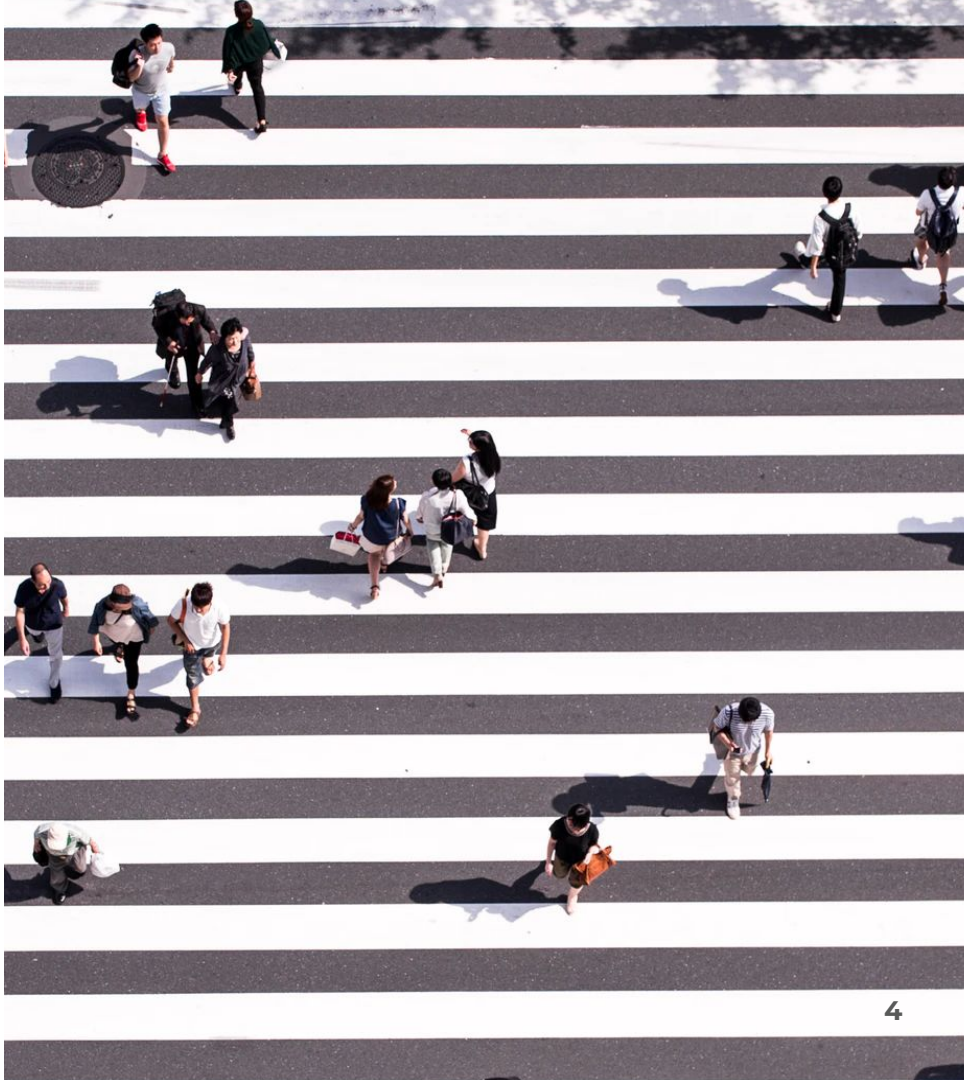
Section I

The People

From the people's perspective, the GIS industry is perfectly diverse. Geospatial data finds its place all over from large companies to micro-entities and needs all kinds of specialists from management to data quality coordination. GIS pros are very devoted; spending over 40 hours a week working is not an exception.

Still, there are points to worry about. **More than 10%** of GIS Managers and Analysts **do not have any feedback** on their work and about **20%** are thinking about **changing** their jobs or even **their professional field**.



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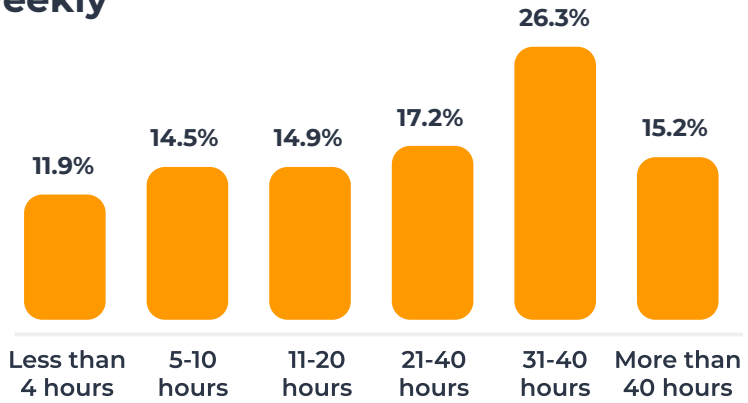
GIS Portrait. Positions and hours.

The GIS Community Survey embraced different specialists working with data, mapping, technical environments and GIS project management.

Positions

Time spent while working with GIS tools, weekly



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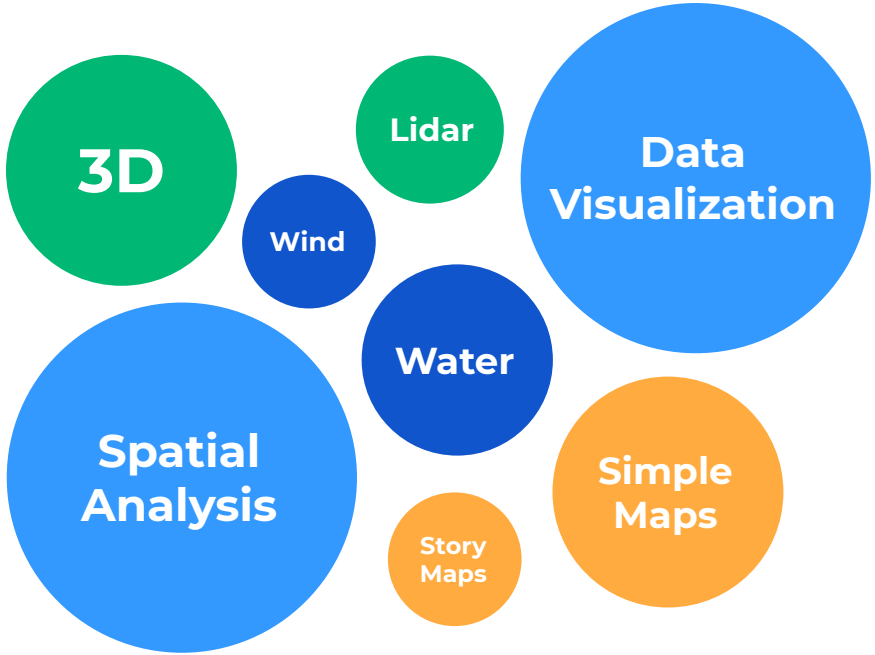
GIS Portrait. Tasks and apps.

You definitely know that a detailed description will take many more pages than we have here. So, let's compare the main items.

Mapping is steadily moving **online**, but story mapping as a discipline is still young. More GIS developers and IT team members are focused on in-house tools, but the trend of making custom-made GIS apps is rising. Strong attention to **data quality checking** makes us believe that the world is moving towards quality.

Every 3rd is somehow in touch with **spatial analysis** and **data visualization**. The Lidar trend is growing, but general **3D** modelling is used wider.



Data Collection

Data Production

Data Quality Check

App creation

Database Maintenance

Programming

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Business View

Conventional thinking tells us that GIS experts are only affordable to big business and governments. Despite these being among top providers of work, GIS finds its place in companies of any size and contributes to self-employment in developed countries.

Industries. Top 5

- Government
- Utilities
- IT
- Telecom
- Energy

Company size

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How do GIS feel at work?

Work requires hours of our lives, but does it give us back any fulfillment?
Generally, GIS people are happy with what they do, the tools they use, and the environment they work in. So, why do people want to switch? The main **demotivators** are: **lack of awareness** and appreciation of colleagues, **low salary**, **limited** career **growth**.

Do you like what you do?

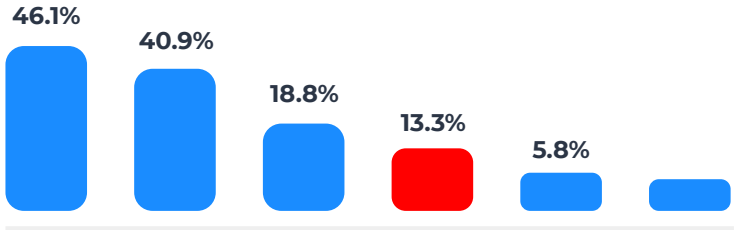
68.8% Yes, sure.

18.2% Well, I would be happier if I'd switch.

5.2% I'm tired but I don't plan to change anything in the nearest year.

2.3% I plan to quit.

How do you understand that your analytics provides the desired result?



Multiple options may be applied simultaneously

- My analytical work answers the questions of a business team
- Stakeholders are content
- My company is expanding
- I don't have feedback on my analytical work
- Metrics are growing
- Other

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Section II

The Time

No one expected 2020 to be the year it has been. It made us devote an entire section to the consequences of the pandemic and current challenges that were certainly modified by that. **Going online**, both in terms of a workplace and easy to reach maps, is in the TOP 10 list collected by our contributors.

What do we have to learn? How do we have to go now? **Programming**, **community support**, a single **GIS platform to share and expand knowledge** are **top necessities 2020**.

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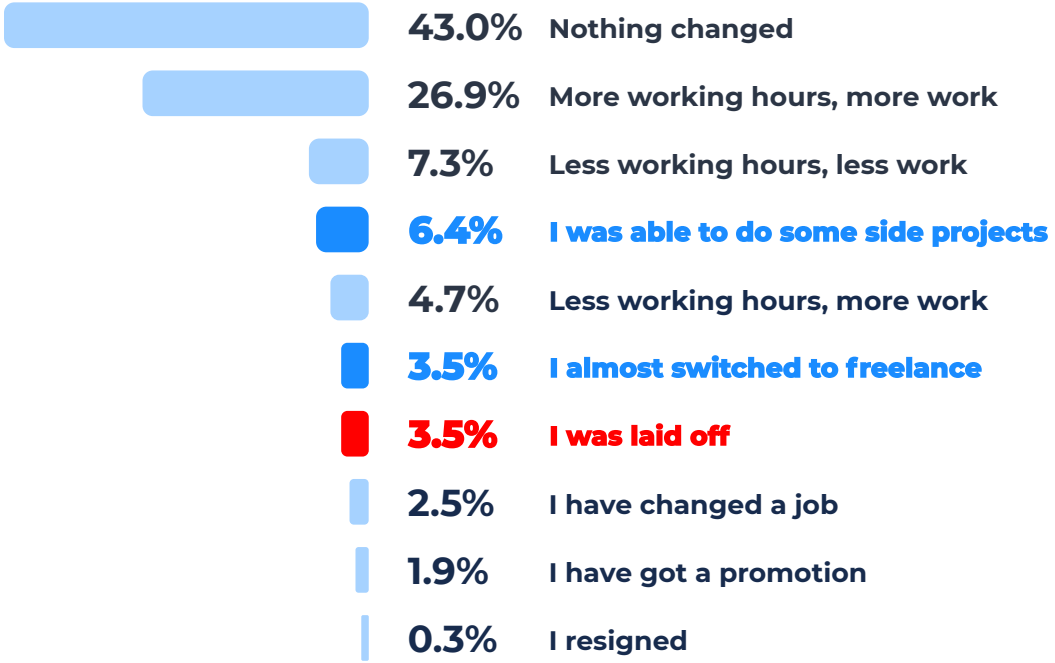
COVID-19's affect on the GIS Industry

We are really happy to notice that things haven't changed for more than 40% of contributors and there is no correlation with titles or tasks. The small amount of the people who were unfortunately laid off shows that this field is less prone to cuts.

The trend that is going to grow throughout the year and beyond is switching to freelance and grabbing some side hustle.



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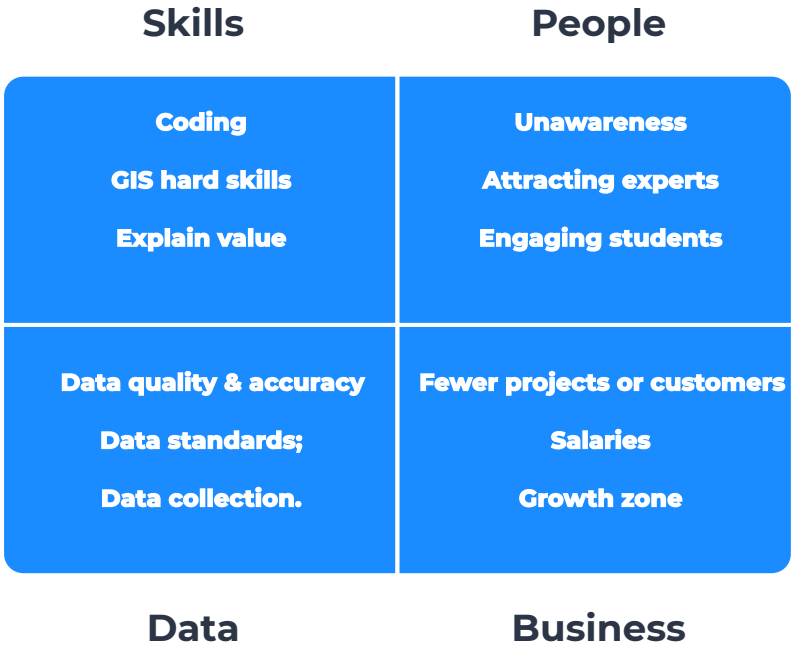
Main GIS Challenges of Today

Surprisingly, these are not exactly the factors listed in the 8 Deadly Sins. None of the TOP 5 challenges relate to software costs, flexibility, simplicity, or performance.

The most raging pain is **unawareness** of colleagues, decision-makers, and newcomers. It is hard to explain what you do; what value it has; why that needs resources to be allocated. **Lack of understanding** is the biggest group, which is almost 2 times bigger than the nearest competitor. Only the sum of **data challenges** can overcome it.



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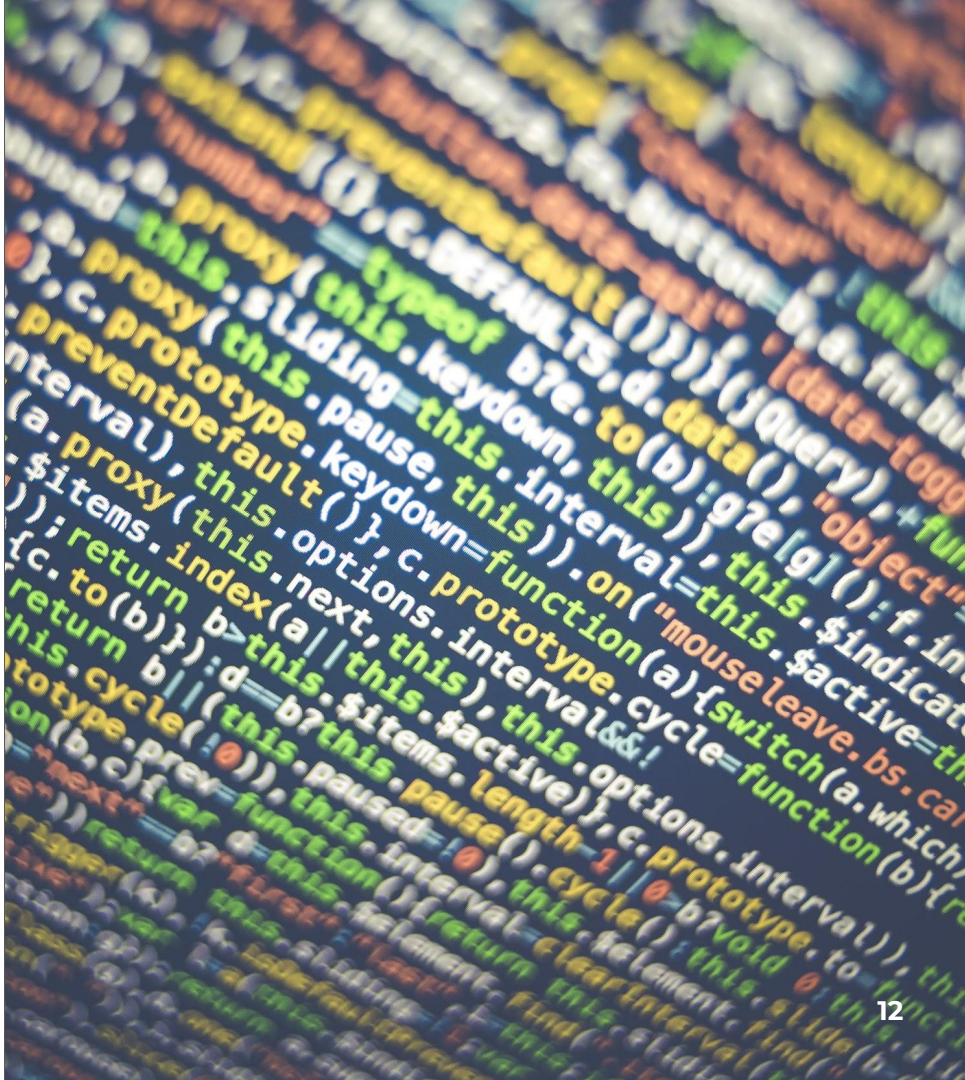
Section III

The Tools

The market is like a Schrödinger's cat: it is highly dependent on the **monopoly** of one provider but it is also torn apart by multiple applications with their own formats and tools, which are **rarely interoperable**. Despite having different expertise, titles and specifics, GIS pros are pretty much united by the things that annoy them and their vision of the great GIS software.



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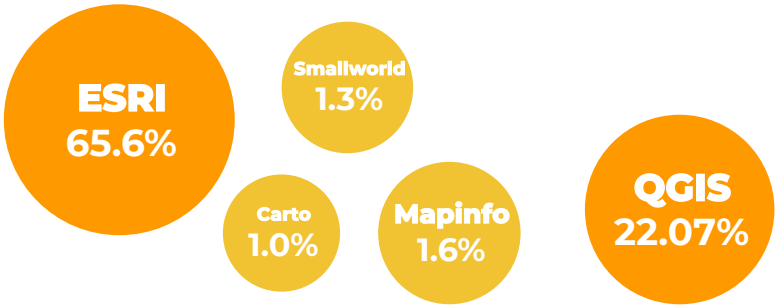
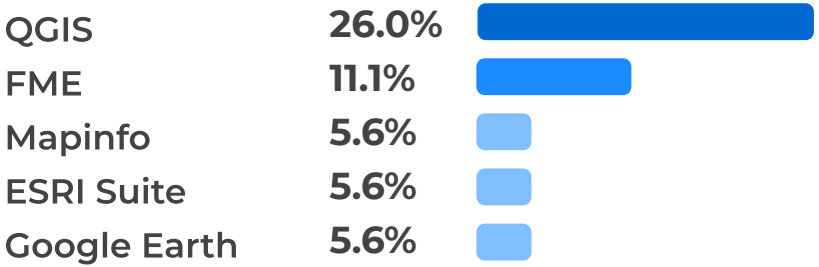
Main and Additional GIS Tools

It is clearly seen how the open-source approach has changed the world. QGIS is among the leaders in both categories: as the main GIS software and as an additional tool, even overcoming ESRI suite. A very strong position is held by FME (Safe) that emphasizes the necessity of integrated data. The longlist of the software entries includes 24 more titles.

Top main tools



Top additional tools



Script languages

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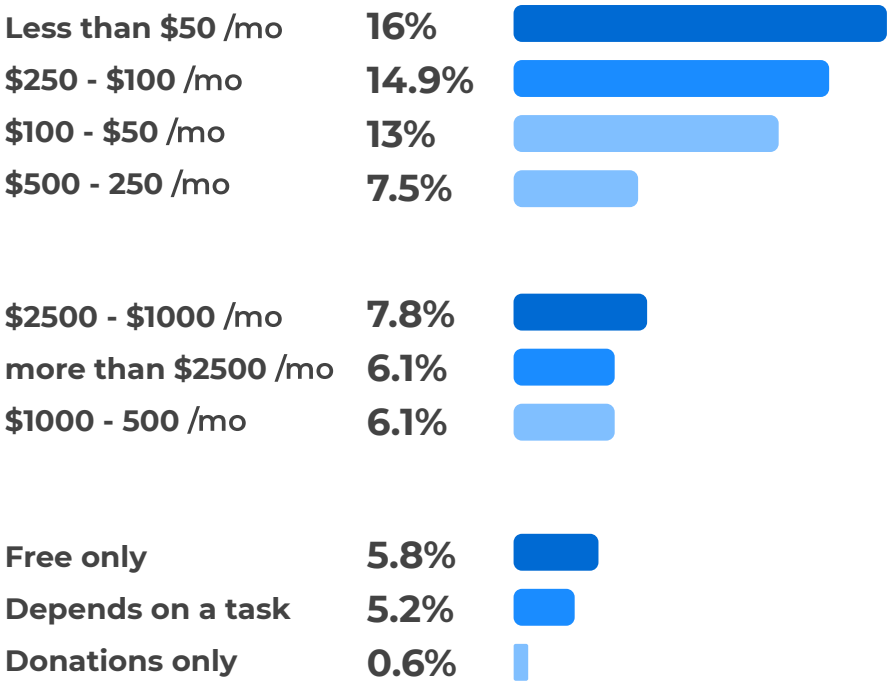
Price Range

How much is ‘too much’ for a GIS tool?

Contributors were asked what the ideal price is per month for the GIS software.



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8 Deadly Sins of GIS Software Tools

The good news is that 16.1% of contributors are totally content with the software they use. Other respondents feel disappointed. More than 20 factors are making them annoyed, of which 8 get the most complaints. Others include coding, limited licenses, limited 3D functionality, etc.

1. Lack of Interoperability

Lots of technical solutions (different formats, interfaces, etc.) that have no integration make it painful to work with.

2. Bulk data problems

While data volumes are growing steadily, GIS tools are not able to analyze and visualize that amount.

3. Too Complicated

Some features are hidden and some require workarounds. There are also complaints about too many options inside.

4. Bugs

Not always HIGH, but inappropriate to the value gained. See the ideal price range later.

5. Low Speed

The absolute TOP factor
that annoys GIS specialists on a daily basis.

6. Crashes

Oops, you know that feeling when your software collapses without clear explanation.

7. Cost

Not always HIGH, but inappropriate to the value gained. See the ideal price range later.

8. Community Service

Software preferences; black box approach; feature requests ignored by developers.

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Aspirations

The list of things users appreciate is 2 times longer than the list of problems. That means that software providers have a large growth zone. Fast fact: “no crashes” isn’t in the top 5.

Most users see a good tool as:

- Fast
- User-friendly
- Handling bulk data
- Better in visualization
- Supporting all formats

After that, the next 5 will be most welcome:

- Lower cost
- Easy publishing
- CAD connector
- No crashes
- Enhanced 3D

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Section IV

The Future

Together with our contributors, we tried to sketch a picture of GIS' future, both in terms of software and the professional community. The tools are seen as easy to use and **intuitive**. An **online** version is a must. The industry has to make a huge step towards reliable **cross-product integration**.

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Disruption Factors

It was not that easy to look into the future and speculate about the factor that is able to generate industry disruption. However, two other options clearly stand out - strong **integration** into the GIS ecosystem and data tools and **easier interfaces** both for programmers and analysts.

Sorting results in a descending way, we were surprised that high-tech features like AI, predictive analytics, digital twins, and automation of everything were left behind by down-to-earth characteristics. In fact, the former had the least amount of votes.

Top 10 Game changers:

1. **Cross-industry integration.**
2. **Ease of work.**
3. **Online/cloud software.**
4. **Affordable price.**
5. **Powerful 3D analysis and visualization.**
6. **Easy data access; built-in options.**
7. **High performance speed.**
8. **User-friendly.**
9. **Flexibility with data.**
10. **Machine Learning.**

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Conclusion

The GIS Community Survey report was initiated to highlight current pains, aspirations and challenges articulated by real people from the data world. We are pleased to know that the pandemic hasn't heavily upset the balance and **demand for GIS is steady** in companies of all sizes. We hope that the subsection about work attitude will help to raise motivation and next year's "No feedback" group will be much less.

The results point out six directions that have to be noted by industry players:

- **Easier and friendlier software interfaces;**
- **Deeper community support and raising awareness;**
- **Better tech performance without crashes and bugs;**
- **Cooperation and cross-industry integration**
- **Reliable work with big data;**
- **Affordability in terms of pricing and licensing.**

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About Aspectum

Aspectum is a US company that implements geospatial projects for consulting, agro, transportation, retail, and real estate industries. Our main product is a cloud data analytics and visualization platform that is used by business analysts and consultants in Europe, North America and Asia Pacific.

We developed Aspectum to counter the old approach with its rigidity, and snobbish positioning of GIS as a tool for elites. To make the system more accessible, we created a cloud platform for geodata business intelligence and visualization that can be used by specialists regardless of their experience.

Find more at:

https://aspectum.com/