THE EVOLUTION OF MAPPING: LOCATION, CONTEXT, AND TIME
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SECTION 1: INTRODUCTION
+ HISTORY OF MAPPING
Introduction

All mappers have one thing in common: the desire to create compelling maps that tell stories and solve problems. But many map-makers struggle to create a complete picture that achieves that goal.

New capabilities in the geospatial industry address a variety of global issues. This guide is designed to help you create better maps with more complete data sets so your users can better understand what is happening in the world around them and make accurate decisions.

History of mapping

Humans have always needed accurate representations of the earth to understand where things are as a way to help us navigate our way around the world.

Traditional maps in the early 1900s took a long time to make as map-makers leveraged creative methods to collect data using horses, balloons, kites, and even pigeons.

The first complete map of India was created in the 1800s and took more than 60 years to produce. Thousands of surveys and measurements were collected using 100-foot chains to go across the length and width of the country.
SECTION 2: MAPPING IN THE 21ST CENTURY
Mapping in the 21st century

Humans have continued to advance in our technological capabilities when it comes to mapping, and there are now numerous types of sensors—including satellites orbiting the Earth—that collect imagery and geographic data globally on a daily basis.

The key catalysts that have transformed the geospatial industry include the availability of the Internet, popularity of smart phones, widespread acceptance of GPS technologies, and mapping services offered by mapping portals such as Esri, Bing, Google, Nokia, Baidu, and others around the world.

We have left the world of geographic data scarcity and entered one of geographic data abundance. This has changed the way we use geographic information:

- Maps used to be constrained to paper, which made them hard to get and even harder to update. Now, you can host or search for limitless digital maps online that are constantly being updated and manipulated.

- Only a select few could create and leverage maps; now maps have become a fabric of everyday life for more than two billion people across the globe.

Whether you are trying to find a specific location on your smart phone or create maps of your city, your country, or an area where your team has a project—geospatial technologies can solve age-old problems.

“Man must rise above the Earth—to the top of the atmosphere and beyond—for only thus will he fully understand the world in which he lives.”
— Socrates
SECTION 3: A NEW PARADIGM
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A new paradigm

Geospatial data has created a new paradigm for how we organize events that are happening on the ground. Maps have evolved with increased information around location, context, and time, enabling users to gain a better understanding of the problems they are trying to solve.

“Everything that happens, happens somewhere, and knowing where is the key to making good decisions,” according to the United Nations. “Geographic information can show when and why things have happened in the past, why they might happen in the future, and where you can take action.”

Here’s an example of using geospatial data, with location, context, and time, to make better maps for your users.

Start with location

Location data is a foundation for all geographic information. Location can be a place name, a coordinate such as latitude/longitude, a pin dropped on a map, or even a geo-located social media post.

Suppose you gave your team a single latitude/longitude point in Rio de Janeiro, Brazil:
Latitude: 22°58′42.49″S
Longitude: 43°23′43.12″W

This information might be useful to some, but without additional context around the point, they would likely find it difficult to decipher the exact location within Rio de Janeiro. Additional map layers reveal information such as vegetation, waterways, and roads to build context around the located point. For example, these layers show the point is near Cabo da Pombeba, with water and vegetation nearby. If a user is familiar with this location, this level of context may help them understand what they are looking at.
Assess over time

Time is critical when you need to provide context about a location that is frequently changing. The time series below shows how the Rio de Janeiro site changed from July 2012 to April 2015. To those in charge of this construction project, adding context over time would help answer:

- How has construction on each stadium progressed over time?
- Which stadiums are complete? Which need the most work?
- Is the entire project tracking to plan?
- Are additional resources needed?
- What should we communicate to stakeholders?
- What areas need to be prioritized based on the latest view?
SECTION 4: SMARTER BUSINESS DECISIONS
Smarter business decisions

Making your business successful requires long-term planning in order to minimize costly mistakes and optimize the performance of your teams.

Geospatial data that provides information around location, context, and time will help you more effectively plan and assess projects—maximizing your return on investment and improving profitability by enabling analytical, fact-based decisions anywhere you are across the globe.

Conclusion

No longer is mapping a physically arduous process, nor are its outputs available only to the rich or to large government entities. Country-wide maps are now being created within weeks or months, as opposed to sixty years like the first map of India.

Every day, geospatial sensors are collecting information that can provide your users with the context they need, when and where they need it.

Governments, enterprises, industry leaders, and non-governmental organizations across the world use geospatial data to connect them with the knowledge they need to make the critical decisions that save resources, time, and in many cases lives.

Geography is now a fabric of everyday life for billions of people across the globe—both professionally and personally—improving quality of life & work everywhere.
Learn more about how geospatial information provides valuable information on location, context, and time at Maxar.com.