The field of Cloud Community is broad and deep. This new column will explore various communities’ progress on Cloud Computing, and will compare and contrast their approaches. Look for supporting material on the IEEE Cloud Computing Website (https://cloudcomputing.ieee.org/communities-of-practice).

A colleague of mine who curates a social media site on Cloud Computing once told me: “It’s getting harder and harder to find articles about cloud. People are writing about cloud-related technologies but not much about cloud computing.” This supports a saying we have in the office: “Cloud computing is computing.” For those of us who have been in the industry a while, it has been a quick and complete transition to using the cloud for just about everything—storage, email, virtual servers, you-name-it and you can find that it is done in the cloud. My young adult children who are software engineers don’t remember a time where they didn’t use cloud, for storage and for all their work and school projects. They don’t even use the word “cloud.” Cloud Computing is so ubiquitous, easy to use, and transparent, that it is becoming difficult to determine what is enabling all of this computing.

Behind the cloud, there are many people working, driving the ubiquity and the diversity. This column will focus on Cloud Communities of Practice and will shed light on one or more of these communities. In Alan Sill’s article “Defining Our Terms,”1 he explains that a standard is successful in part by “gathering input from multiple communities, and taking a broad-based, multi-technology approach toward implementing the identified solutions to real-world problems.” Inspirational and not just for standards, this is how many difficult problems are solved. Communities build clouds and these communities consists of many groups as Figure 1 shows.

![Figure 1: Various communities of practice make up the cloud computing community.](image-url)

While there are many communities related to cloud computing, I will select five different communities to examine in the depth in the next five issues of IEEE Cloud Computing magazine.
EXAMPLES OF COMMUNITIES AND TOPICS

Standards

In his article on “Emerging Standards and Organizational Patterns in Cloud Computing,” Sill outlines three types of standards organizations as shown in Figure 2.

- industry-based special-purpose consortia composed mostly of large-scale companies and sometimes organized around a foundation model;
- formal standards development organizations (SDOs) that exist primarily to develop standards; and
- informal community organizations that can be open to single-person developer or user input.

![Figure 2. Three types of standards organizations.](image)

Each of these groups is a unique community and yet they also interact synergistically to form a new community. An example of this is the IEEE Standards Association P2302 — Standard for Intercloud Interoperability and Federation (SIIF). Members of the group range from government organizations, academia, and industry to form a group that is capable to form a strong standard that will allow clouds to work together. In addition to the series of articles in upcoming issues, I’ll interview members of the team from different areas and do podcasts on the IEEE Cloud Computing podcast on ITunes.

Supporting Internet Technologies

Cloud computing is layered upon a long list of supporting standards. New standards emerge from different sources. This column will examine the sources that create these underlying standards, what motivates them, and how they work together. A useful list of these standards is contained in the Inventory of Standards Relevant to Cloud Computing.

Industry Alliances and Research Groups

Many open source consortia are forming around cloud-related technologies, like The Open Fog Consortium, and the Open Research Cloud, which represents a “collaboration of the international community supporting scientific research computing.” How do these communities form? What makes them successful? What is their output?

Cloud APIs

In the area of APIs, I will investigate a broad range of topics, such as the industry’s use of Swagger as within Google Cloud and other cloud providers, and how RESTful APIs compare with SOAP/WSDL/XML APIs and their overall adoption.
Cloud Hardware
What does cloud hardware look like these days? As more virtualization occurs, what changes will the user experience? A colleague that provides cloud hardware farms to cloud providers laments that there is no discussion of hardware. I will look to interview cloud providers and tour data center facilities. IEEE Cloud Computing will be doing a special issue on Reengineering Cloud Data Centers with papers due in March.

Social/Economic Communities
There are many social and economic issues related to cloud communities. I’ll look at some particular areas raising concern such as monopolies or at least oligopolies in the cloud and privacy issues. How are these issues being addressed with standards? Within consortia? Through legal and regulatory actions? And what is the latest research?

Evolution of SaaS/PaaS/IaaS
This is not on the diagram, but I plan on doing a column about the foundational framework of cloud computing: SaaS, PaaS, and IaaS (Software as a Service, Platform as a Service, and Infrastructure as a Service) and related elements such as Hardware as a Service and Data as a Service. How have these essential concepts and implementations evolved over the years and where are they going? For this topic, I will interview a wide variety of cloud computing leaders and compare the different perspectives.

CONCLUSION
Thank you for reading the initial installment of my column. Please participate in a poll I set up for readers to indicate areas that they are interested in: https://doodle.com/poll/7izfggptvxegqqsz.

REFERENCES
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