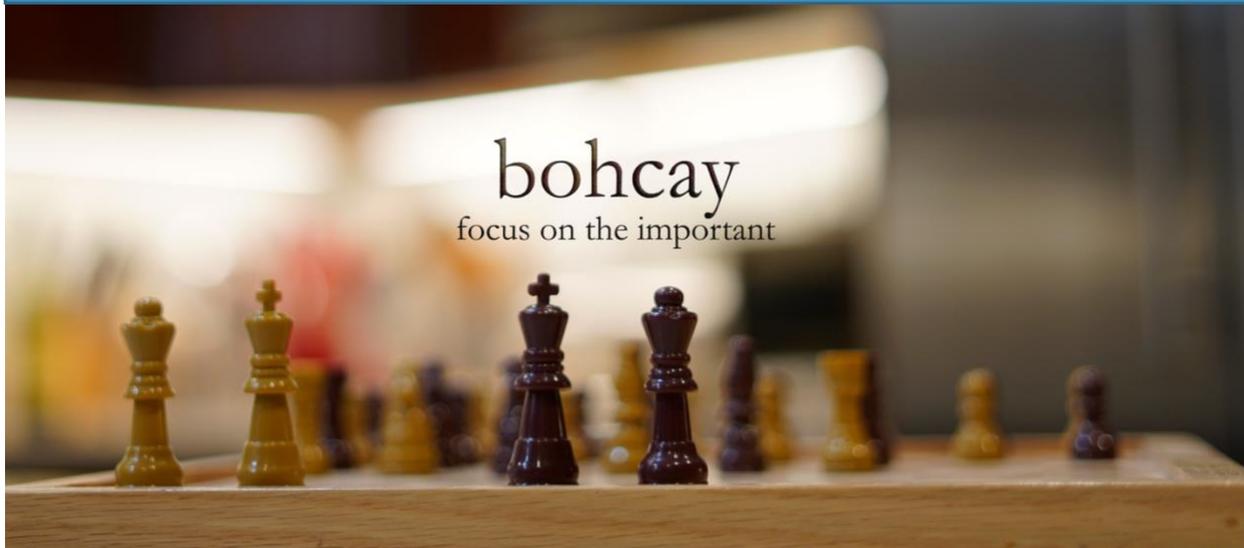


SERVICE FRAMEWORK



Service Framework Issue 01. 06/2019

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2019/2020 PRACTICE FRAMEWORK

The Important

- For 2019/2020, bohcaY will have five practice areas
- Three practice areas are driven by fundamental IT trends:
 - **Network Edge**
 - **Network Infrastructure**
 - **The Information of Things**
- Two strategy practices are functionally targeted to decision makers, business leaders, strategy & planning practitioners:
 - **Network2025**
 - **Network Strategy**
- Introduction of subscriptions to each practice area will be staggered, with Network Edge set to become available 3Q19. Consulting can be structured as either a project or ongoing engagement.
- While networking spans many technology, supplier, buyer, and architecture domains, those being impacted by cloud, the proliferation of IT, and automation/autonomy are the most vibrant at this time
- The Network Edge is a confluence of many different technology trends
- Network infrastructure is undergoing operations transformation
- Information as a “thing” has become one of the most important products of networks

- Strategy & Planning practitioners, as well as business leaders and decision makers, need ways to navigate this dynamic change, and hence the two strategy practices, one focused on the broad concerns of strategists and the other on mapping out adoption timelines to assist planners
- Bundles and packages to be announced at a later time

Introduction

The abundance, proliferation and democratization of IT resources, facilitated the formation of numerous disruptions including cloud, smart phones, virtualization, and new software architectures such as serverless and microservices. Leveraging these disruptions, and going further, new areas of innovation are emerging including SD-WAN, 5G, Edge Computing, IoT, Analytics, Machine Learning, Artificial Intelligence, Information as a product, Automation and Autonomy. These new innovations have the potential to reshape the networking landscape, in terms of the dominant players, the basis of competition, and industry structure. Technology, business, and strategy questions face business leaders, strategists, and planners. How will networking solutions evolve, what business models will be dominant, what transformation will be required, and what will the chessboard look like?

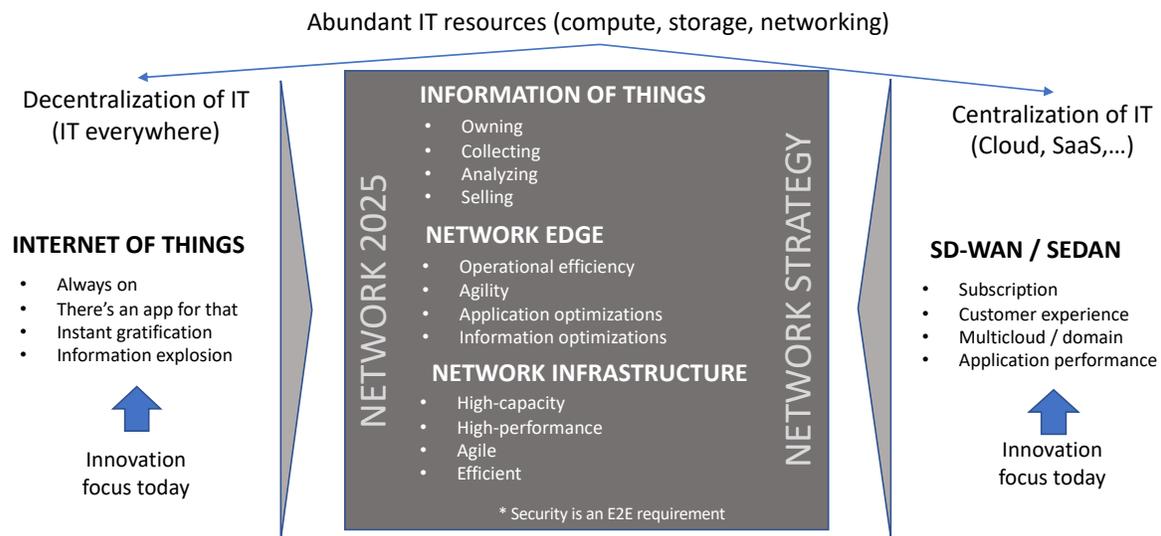


Figure 1. bohca 2019/2020 framework for research and consulting practices

Drawing on, and framing these emerging forces, bohca has organized its 2019/2020 research and consulting into 3 technology/business practices, and 2 strategy practices. The strategy practices will provide distilled insight across all three of the technology / business areas in addition to addressing a broader spectrum of strategy and planning concerns.

The introduction of these practice areas will be staggered, so bundling announcements will be made as the portfolio expands.

Network Edge (Available 3Q19)

The term “network edge” has always evoked different things to different people, especially those that are strongly engaged in either enterprise or service provider networking. Current trends in networking make

this old distinction more blurred than what it once was. Sure, Service Provider network infrastructure may still have some differences to Enterprise networking, but beyond that, the Edge is transforming, especially with respect to managed services.

As SD-WAN (SEDANS), 5G, IoT, and Edge Computing all evolve, how we think about the edge will evolve as well. In addition, there are entanglements between all four of these. SD-WAN could become an important approach for IoT networks. Information collected from IoT devices may be processed at Edge Computing points. Mature 5G implementations may add value to IoT deployments. And of course, security permeates all of these. These are just some of the technology, business, and solution entanglements.

Important questions:

- How long will these technology areas stay distinct before larger end-to-end solutions emerge?
- What are the connections between each of these and what are the consequences of those connections?
- Which of these are holding back the development of another?
- What role will WiFi play in radio access?
- What will this all look like 2-5 years from now?

Network Infrastructure (Available 4Q19)

If there are no roads, it does not matter how good the cars are. Well not unless we are all off-roading it, making our own trails. Underpinning the Internet is packet and optical infrastructures, a myriad of access technologies, and perhaps one day, even quantum networking. The focus of this practice is on packet & optical networks.

After a decade or more of speculation that packet would destroy optical, or optical would destroy packet, both still exist, and in significant ways retain distinctions. There continues to be development of greater integration. Is it having an impact, will it have an impact, what are the dynamics of that impact? In addition to the packet and optical specific questions, these are just some of the questions that abound in this space. Both packet and optical have interesting engineering challenges.

Perhaps the most important issue today is software-defined infrastructure, perhaps better called self-driving infrastructure. This starts with crude approaches to automation and stretches to boundaries set by science fiction: machine learning and artificial intelligence. When will these technologies permeate infrastructure, and what will infrastructure look like after they have?

Important questions:

- What is important in packet networking today?
- What is important in optical networking today?
- What progress is being made towards automated / autonomous networks?
- What progress is being made in leveraging machine learning and artificial intelligence?
- Is packet / optical integration happening, and what will it look like?

Information of Things

While hardware sensors and devices are critical to the Internet of Things, and there is significant value generating innovation at this stage of market development, the long-term value will derive from the Information of [these] Things; the Information of Things.

There are many ways to profit from information: own it/license it/sell it, collect it, store it, analyze it, mine/transform it, and create new businesses, for example two-sided information platforms / market places. For sure there are many ways of profiting from information that have not even been considered yet.

Multiple types of networked information have value. Information about the network itself (underlay and overlay), information about how the network is being used, and the information that is actually flowing over the network.

Important questions to be considered include:

- What information is valuable
- What business models are required to capture information value
- What technologies are impacting the development of information

Network 2025

Strategists and business leaders need to synthesize trends, insights, opportunities, and threats across the entire networking landscape. Planners need to have a point of view on what technologies will be early stage or mature, and when. If half of strategy is being in the right market, then The Important includes when markets will present accessible opportunity, depending on size, capabilities, and insertion strategies. Network 2025 creates a portrait of what networking will look like in 2025, and the years in between. It synthesizes insights across different network domains, and qualitatively maps out technology evolution over time.

Important questions include:

- Which technology and business strategies will be impactful between now and 2025
- At what rate / when will different technology and business strategies mature
- What are 2 and 5+ year scenarios to do planning against
- What is The Important between now and 2025

Network Strategy

Strategy, as a function, considers product and technology, but takes a much broader business view as well. Industry structure, competitive landscape, opportunities for growth, strategic options (M&A, partnership, organic investment). Strategy frames the overall business conversation around where the opportunities are to win, and how. This is a strategy practice, with generic insights for practitioners in any industry, but with a specific conversation around networking.

Important questions

- What businesses should a company be in?
- What does the chessboard look like?
- What issues need to be considered in a strategy review?
- How is industry structure evolving / what opportunities look attractive?

Summary

There are many ways to frame networking research and consulting. In 2019/2020, we target three technology/business areas that are particularly noteworthy: Information of Things, Network Edge, and Network Infrastructure. Network 2025 adds an overall view of where networking is heading, assisting investment decisions. Network Strategy provides the broad strategy, industry, and business lens required by strategists, planners, and business leaders.

We are excited about this practice framework and hope you can join us on this journey to discover and explore *The Important* in Networking.