

# Open Source Strategy for Network Transformation

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## Agenda

- I. Overview and Background
- II. Case Study: AT&T's ECOMP contribution at Linux Foundation
- III. AT&T's approach to Open Source Development
- IV. Patent Considerations in OSS Projects and the Bottomline

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## Overview and Background

- AT&T has a long history in being a pioneer and a leader in Open Source. AT&T Bell Labs invented numerous software operating systems and languages that have revolutionized the world. Examples include C, Unix, S, and C++ to name a few. Those software and systems have become the foundations worldwide behind most software platforms developed today.
- AT&T Bell Labs was also an early leader in Artificial Intelligence starting with the pioneering work by Claude Shannon back in the 50s. AT&T has open sourced numerous world-renowned machine learning software including BoosTexter, Support Vector Machine and more recently, RCloud.
- A key consideration is how does your industry react when a new paradigm is introduced affecting the entire ecosystem?
- What about interoperability across the ecosystem and the across the globe?
- How to start working in an open source community?

## Case Study: AT&T's ECOMP Contribution at Linux Foundation

- Since 2007 with the rapid adoption of smartphone devices and high-speed broadband services, AT&T's network traffic has grown over 350,000%. As of August 2018, AT&T's network carries an average of 220+ Petabytes per day. Today, its 335+ petabytes per day.
- In 2012, this exponential growth inspired AT&T to define a vision for a programmable Software-Defined Network (SDN) and began development of a next generation network operational management platform called Enhanced Controller Orchestration Management and Policy (ECOMP).
- Creating ECOMP, or any extensive software platform, through in-house development or by purchasing proprietary software, is slow and expensive to meet today's rapid pace of technology innovation and transformation.

## Case Study: AT&T's ECOMP Contribution at Linux Foundation

- The ECOMP platform was architected by AT&T to deliver service independent capabilities for design, deployment, monitoring, and lifecycle management of carrier-scale, real-time network workloads. With ECOMP, AT&T set up a goal of virtualizing under SDN-control over 75% of its target network by 2020.
- ECOMP was one the largest code submissions to open source in over a decade with nearly 10 million lines of code.
- With a long history of standards and open source leadership, AT&T had to decide whether to continue to build a network OS on its own.
- AT&T had to decide whether it should open source ECOMP at the Linux Foundation and how well would it be received.
- Deciding on OSS vs. getting traction are both difficult obstacles which must be considered.

## Case Study: AT&T's ECOMP Contribution at Linux Foundation

- For AT&T, it had to convince the vendor ecosystem to give up its proprietary, special purpose computing technology and participate in an open source community.
- For any open source community, there must be value in usage for the entire ecosystem to obtain traction and robust code development.
- One strong consideration for operator community was standardization of the network operating environment allowing strong interoperability.
- Another important consideration includes rival open source communities.
- Today, the ONAP community is 100+ member companies, with mobile operators representing 70% of the world's wireless subscriber traffic. Recently, ONAP had its 6<sup>th</sup> release, Frankfurt.
- ONAP is driving faster innovations to market and is the driving force behind AT&T's plans for 5G Radio Access Network virtualization.

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"Increasing Innovation and Transforming Industries through Open Source"