

OLF NETWORKING

LFN Developer & Testing Forum

ONAP – the Next 5 Years

Transforming ONAP

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Background & Analysis

ONAP was created over 5 years ago, with a very ambitious vision to create a commonly acknowledged open-source automation platform for the telecom community

- Initiated and endorsed by many CSPs
- Gained rapid support from vendors

Although not realizing the full vision, ONAP has accomplished a lot:

- First open-source community in Telecom Management
- Operators and Vendors working together
- Delivering valuable software to the community
- Providing an environment for collaboration on use cases
- Establishing a reference architecture for modern management systems and providing a vocabulary for such systems

However, we believe that ONAP is not adopting rapidly enough to changing circumstances

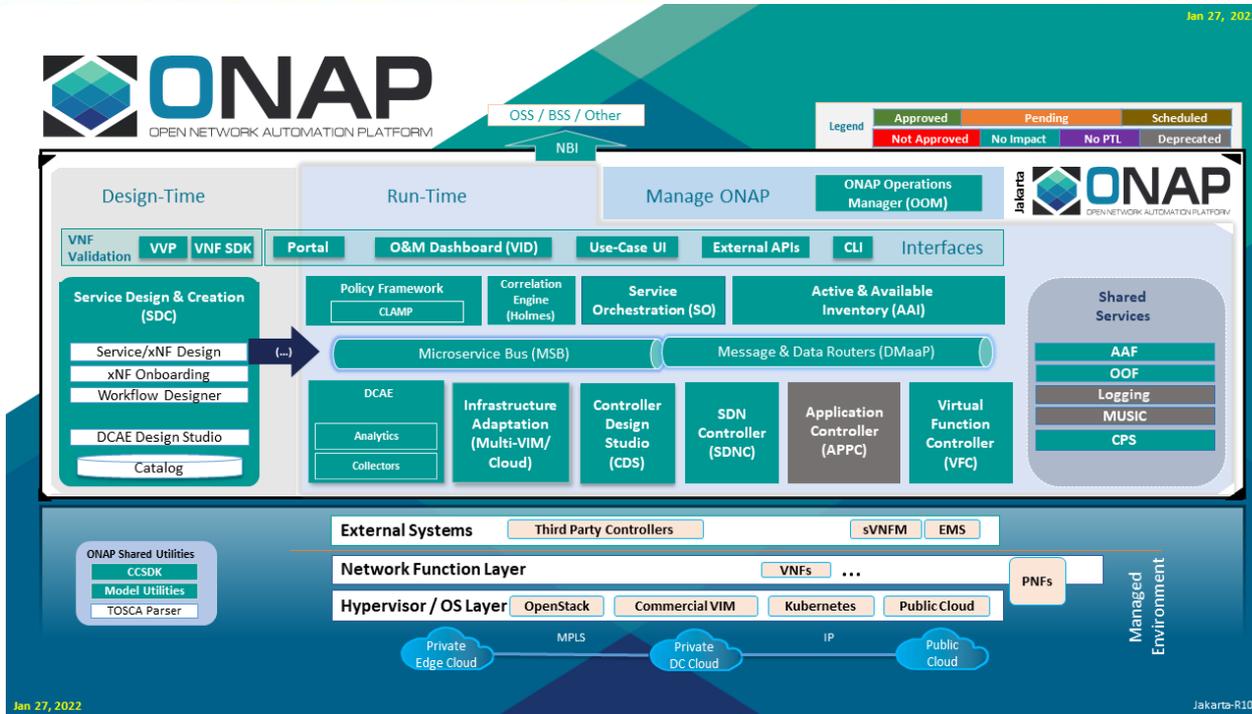
ONAP Overview – Three Aspects

Functional Architecture

Overall Automation Platform architecture

Expectations of functional and non-functional scope

Can be viewed as requirements



Component & Interface Definition

Defines the components in terms of interfaces and capabilities (capabilities often expressed in code).

Component implementation may or may not use the opensource technology

Technology Source/Realization

Open-source code
Environment for Use Case collaboration

ONAP Challenges

- The value is in the components that ONAP produces, not so much in the “Platform”
 - Most users take components from ONAP and integrate it with their own platform
 - The new Nephio project seems to continue this component trend
- ONAP is structured to deliver a platform
 - Puts a heavy burden on the community and require wide involvement from LF staff
 - Results in complex/sizeable project management and long lead-times and a perception of a heavy monolith
 - Cost of engagement is high, both regarding membership fee and own work
- ONAP contributions have become skewed
 - Code contribution has decreased, and effort is in a small number of projects
 - Several projects are dormant or unsupported
 - Getting volunteers for some key positions is proving increasingly difficult
- Focus in ONAP is moving away from where the real value is
- Successful open-source projects tend to focus on a limited set of specific use cases. ONAP is too multi-faceted
- In contrast O&M open-source in general is popular, flourishing, and heavily used and new initiatives pop up
 - Nephio, Camara

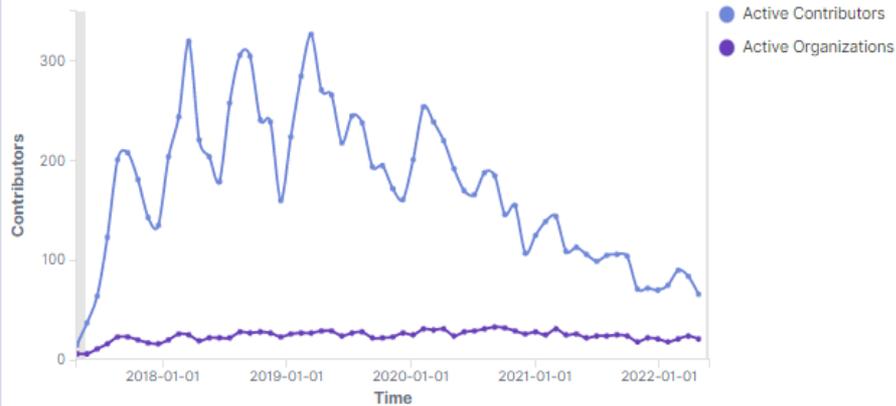
Proposed work for a release, trend

	UC	Feat	Spec	REQ	NFR	BP	GR	Total
Frankfurt	6			57				63
Guilin	4			18	16			38
Honolulu	3	8	4			2	6	23
Istanbul	3	4	7			4	6	24
Jakarta	2	4	7			4	6	23
Kohn	2	2	2			4	6	16

Requirements Reviews

- Since ~Honolulu:
- Most use cases/features presented are continuation -> the scope of the proposed work is fairly well known and little (if any) cross-uc alignment required
- Low attendance to reviews; usually REQ officer(s), the involved community members, the ones waiting to present their uc/feature on the same call
- For continuation use cases the more relevant questions tend to be on architecture implications -> ARC review
- **A question to the community: could we consider streamlining our release proposed work review?**

Active Contributors and Organizations



Commits



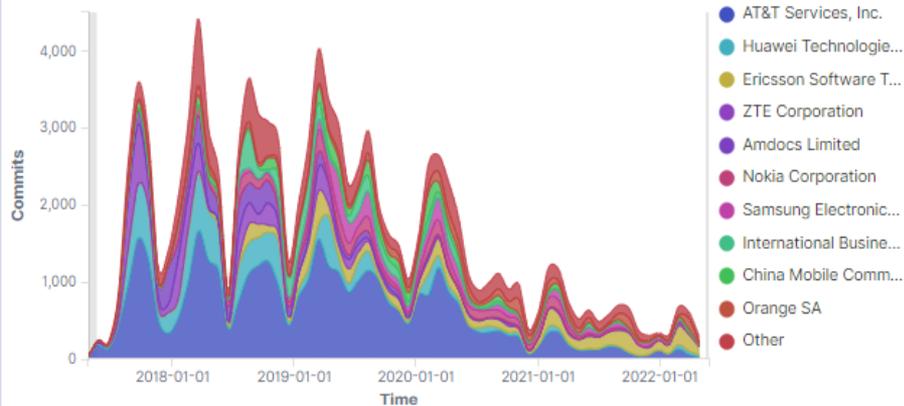
About Active Contributors and Organizations

This line graph shows the count of active unique contributors and organizations committing code over a period of time.

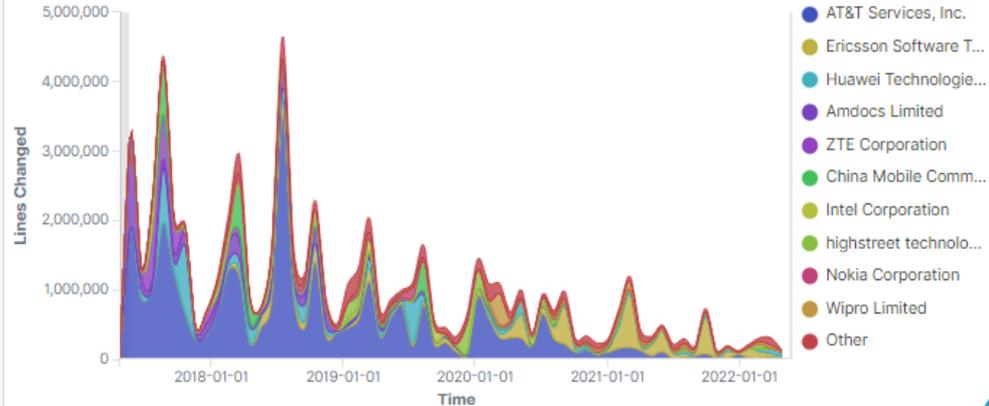
About Commits

This line graph shows the count of unique commits submitted over a period of time.

Commits By Organization



Lines Of Code Changed By Organization



Opportunities for ONAP

- Expands on its position as the reference platform architecture for Network Automation systems
 - Increased alignment with SDOs and other open-source projects
 - Certification
- Provides reference implementations for the application of technologies that standards organizations are not suited to describe
- Delivers valuable components for the reference architecture to the Telecom Management and wider community
- Supplies an ecosystem that allows the community to trial Network Automation applications for their domains
- Provides common support for component development and community trials
 - Build environment
 - Guidelines on security, APIs, logging, metrics that components can use
 - Support for trial environments based on community needs

A background image of a golden wheat field under a bright, hazy sky. The wheat stalks are in sharp focus in the foreground, while the background is softly blurred.

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Timo Perala – extra comments

The process that we created for the requirements and the review were more geared towards the Frankfurt release situation.

Now with $\frac{1}{4}$ of the volume maybe the process is over-kill.

Lukasz Rajewski, T-Mobile Poland

LR: Not fair to just look at statistics – the project is not at the same stage as in 2018. There was a lot of functions needed, many requirements, lots of designers and contributions. But there is not less interest now. Still the community is as strong as the size of contributions.

Important in the community to share the experience and offer help to others, not only to benefit from what others are doing.

We know there are companies that use code but don't contribute. The question is how to engage the community more.

There is still new functionality that need to be developed

MB: Don't people feel welcome? Are we too much of a "private club"? Are they not allowed by their companies to contribute?

LR: Not an easy SW to work with, takes a lot of effort and should not be compared to easier code bases.

It is not about not being welcomed.

Ranny Haiby, LFN CTO

Not to be too worried about diminishing contributions - would be interesting to compare with another 5 year old project. I think the curves would be similar since it's natural to move on to echo-system projects. Easy to go into gloom & doom. No need for that.

It is natural that the number of code contributors decrease as the project continues.

When reading this contribution (also between the lines) it suggests repositioning ONAP as a reference architecture, which makes a lot of sense. On the other hand, raises the question of who would develop if there is not any direct business behind it.

On SW being difficult to work with - I have worked with two vendors and heard from others and have not experienced that developers give up on contributing because it is too difficult. I haven't heard from anyone giving up. Eventually, they figure it out. There is also support from the community.

However, hard to convince management to allocate budget if there is not business case. This will be even harder if we move towards a reference architecture. A more direct path to commercialization is needed.

MB: The proposal is a reference architecture in combination with valuable components that give business value. RH: Let's be careful with the wording.

The ONAP community should get more serious about integration with other open source projects. The days of silo open-source projects are over, and it is more important than ever to become an integral part of initiatives such as the 5G Super blueprint and Open RAN.

- ONAP is a reference architecture for anyone working in automation now – whether people like it or not.
- Gives the industry a vocabulary and a common way of building
- Use cases: too much stress on those and a bit unrealistic
- Operators and others could use the platform and add their own information (metadata) on top of that and build PoCs and show to the community how they are using it without contributing code – however less tangible and difficult to show the value
- We should identify some kind of user group and ask how ONAP is used

- Good to have a review. We should have checkpoints now and then (maybe at every milestone) with this type of review to see whether we are going in the right direction.
- The number of contributions are going down – that is clearly a trend, but that is to be expected in a mature project. We do see many contributions in new projects, like CPS.
- If we look at the overall picture, it looks like it's all done. A lot of what is not used has been removed.
- How can we make it better? Based on my experience from working in other open-source projects the adoption of operators is critical, so we should target that:
 - Without this vendors will not have any interest either.
 - This transformation work should be performed closely with CSPs: Deutsche Telecom, Orange, Bell Canada, AT&T etc
 - Understand the use cases and understand their challenges – prioritize this
 - Requirements are running low it's time to zoom in on requirements. Putting basic requirements as priority
- We should have frequent demos to a larger audience. The pandemic has affected the activities.
- ONAP can not do it alone – collaboration/communication with other projects are needed to be successful
- Seek use case collaboration with CNCF, EMCO, LF Edge, Akraino

Alessandro D'Alessandro, TIM

Initially ONAP was immature but improved and could be adopted after a couple of years.

Some divisions in TIM are in the process of evaluating ONAP functional blocks.

Problems with ONAP: too many options to do the same thing which cause operational challenges → complex SW. The initial merge of the two original open-source network projects was good, but difficult to have different functionality. Require handling of different components and tools.

Early use cases were very simple and not mature and could only be used to demonstrate some features.

There are interfaces to functional blocks, but the behavior is less clear. The value is in the process to pursue use cases.

Our interest is the network slicing use case. Looking at the echo system, today nobody can provide neither open-source code nor commercial code for this use case.

Focus on a few use cases and simplify, instead of adding new features.

Catherine Lefèvre, AT&T

5 years is an important milestone and a good time to reflect on ONAP.

The initial vision was to propose a platform that all carriers could onboard and try out. However, carriers still have the challenge with their legacy system and often several of them. After five years companies have their own infrastructure and big data, but there are still some components needed to demonstrate, prototype and for use cases before production deployment.

We have to start in the platform concept and vision but refine the focus.

Need to speak externally in terms of components that can support. Talk less about SW defined network and instead highlight the next generation network automation and the virtualization of the RAN.

Refocus from platform to support the components that are becoming extremely key after 5 years of development.

The reduction of scope and number of contributions are partly due to increased open-source competition from other projects (LF 30 → 50+). Spreading thin since companies have limited budget.

We have become specialized in different components.

The number of features per release was reduced by the new release cadence. The result was less but not more often.

Time to review the vision and roles of the Requirement and Architecture subcommittees together.

Mark Fiedler, Deutsche Telecom

In follow-up conversation in a small group

The platform is still needed. It should be preserved.

Put the focus on SMO.

Suggested Conclusions

1. Not less interest now but the community is as strong as the size/value of contributions. It is natural that the number of code contributors decrease as the project continues.
2. The value of ONAP is moving from the platform to the components – *disputed*
3. Provide common support for component development and community trials
 - Build environment
 - Guidelines on security, APIs, logging, metrics that components can use
4. Supply ecosystem that allows the community to trial Network Automation applications for their domains
5. Important in the community to share the experience and offer help to others. Some companies that use code but don't contribute. How to engage the community more?
6. Streamline the requirement process (review vision and roles of Req and Arch SC together)
7. Work on the value argumentation: reference architecture?/key components?/convince-your-boss-kit?
8. Establish user group
9. Demos to a larger audience
10. Seek collaboration with other open-source projects: CNCF, EMCO, LF Edge, Akraino
11. Strive for becoming an integral part of initiatives such as the 5G Super blueprint and Open RAN