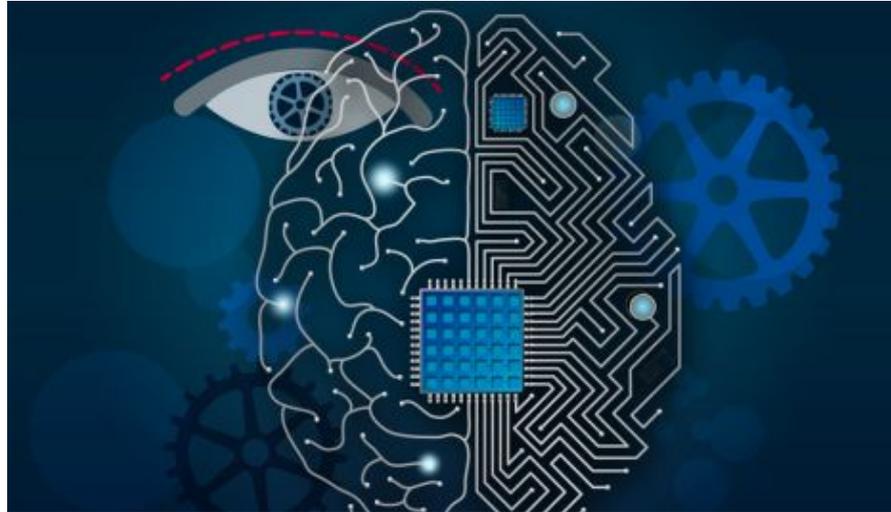# Update on a commercial implementation of ICN video distribution

8x

8x

ICNRG Interim Meeting - September 24 2018

Who are we: 8x Labs

- Montreal-based startup
  - Founders involved in television and streaming technology for 20+ years
  - Targeted customers include content creators, TV networks, operators and distributors
- ***Our Goal:*** *providing innovative software solutions to support their video services and improve their customers user experiences on any device at competitive costs and improved performance*

Our challenge: Bring Content Distribution to the Edge

Content   Ingest   Distribution   Consumers
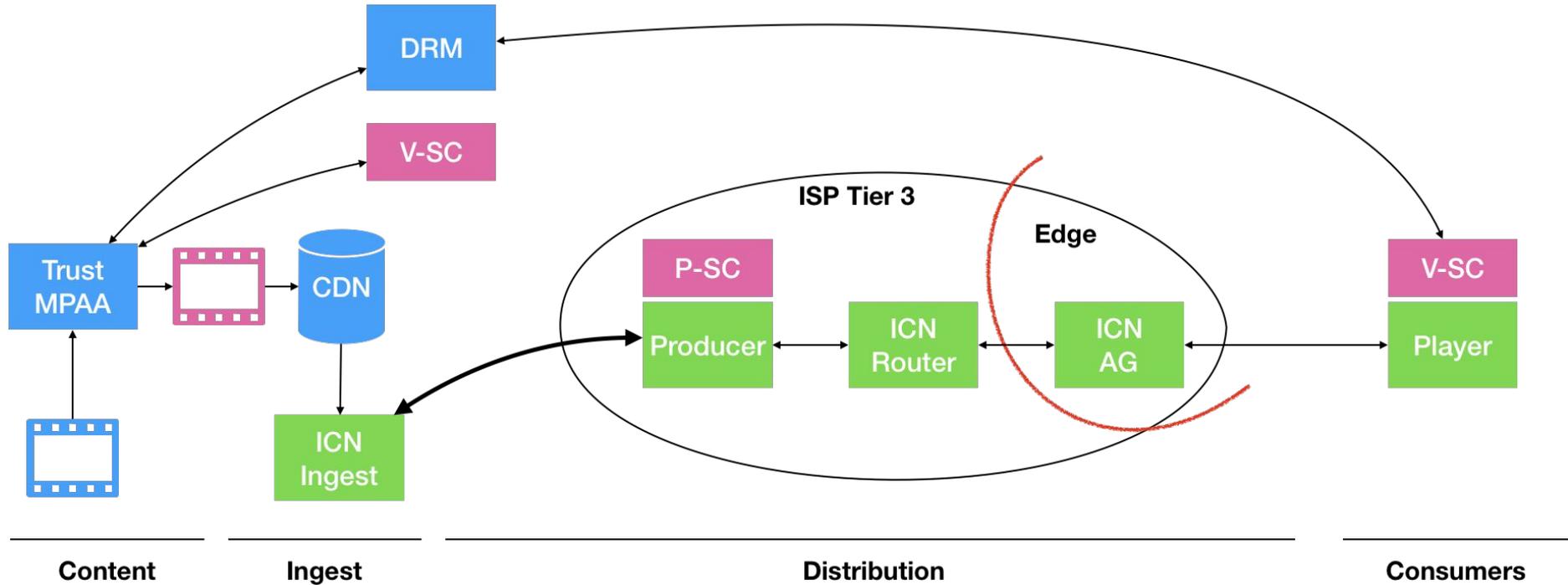
Our tools: ICN and Smart Contracts

ICN

- Video distribution scale with live-sessions rather than with the number of users
- Low Latency Video Distribution via In-router Caching

Smart Contracts on the Blockchain:

- Trustless consensus
- Smart contracts, a protocol to automatically verify and enforce terms of an agreement

The strength: Combine ICN + Blockchain:

- *Enable untrusted producer nodes to join ICN*
- *Enable a decentralized access control system with proof of origin and delivery*

Achievements since Montreal's Interim on July 15th 2018

- The company is now *hosted* in the advanced incubator in Montreal **Centech**
  - Brings expertise from academia, entrepreneurship and advanced networking to the 8x development with ICN technology transfers

- *Partnering* with **ENCQOR** a joint university-industry 5G testbed between Quebec and Ontario
  - Laval, ETS, University of Toronto and Waterloo
  - A five-year strategy to provide access to 5G networks to SMEs, researchers and academia and major industry partners
  - Edge networking focus

Achievements since Montreal's Interim on July 15th 2018

- Recently started *testing ICN* routing capabilities on the Kontron's Symkloud ME1100 compute node
- *Selected* to test, demonstrate and deploy our ICN solution on the LabVi (www.labvi.ca): a **Living Lab** in Montreal

8x to provide the first ICN deployment on the ENCQOR 5G network

Development and deployment - The Issues

Focus on business challenges
- Identify major expenses and revenue streams in customer's business models

Ease of integration
- Add small changes on top of pre-existing solutions (iterative approach)
- Minimize risks by parallel deployments

ICN open source and community support
- Is this an active community?
- Who is the sponsor?

Development and deployment - The Answers

Focus on business challenges
- Concurrent live video sessions is not a scalable model i.e. CDN + HTTP (HLS, DASH):
  - increase in users = increase in cost

Ease of integration
- Cisco's Hybrid ICN (hICN) allows interleaving IP routers and ICN routers
- Other solutions to be considered in the future

ICN open source and community support
- FD.io provides production grade libraries e.g. VPP (Vector Packet Processing)
- Sponsored by Cisco, Intel and others (academia, researchers etc.)

Next Steps

- As a company: Continue our product development (MVP) and building the team

- As an ICN community member: Identify other ICN use cases and facilitate their test on ENCQOR's 5G network
  - Interested parties can contact us

Further steps with ICNRG? Continued participation, promote ICN in the industry, draft etc.
Suggestions welcome!

Contributors

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