MTP Priority Update
Q4: Cache

Our Data Center Operations team:
- Reduced OpEx costs by 11%, saving ~$21k/mo
- Saved $100k in CapEx

Q1: Cash
API Portal and Gateway Launch!
https://api.wikimedia.org
Overview

We are continuing to evolve our architecture by introducing more structured data and leveraging machine learning — this is unlocking new capabilities in our products to support our communities. By improving our code quality, automation and developer tooling, we are increasing our capacity to innovate, experiment, learn, and deliver. Supporting our diverse technical communities is resulting in growth and enables solutions that engage with our content and data, and also leverages Wikimedia data beyond the core wiki experience. In support of Content Integrity, we continue to build and expand our tools and knowledge.

Progress and Challenges

The new technical decision making model is making good progress and will have a pilot project soon. We've also defined growth rates for our metrics on structured data and media usage and the creation of models for identifying misinformation is well underway.

OKRs

<table>
<thead>
<tr>
<th>Content Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evolutionary Architecture</td>
</tr>
</tbody>
</table>

Actions

- Pilot new technical decision making process
- Hire the Director of Disinformation (Position opened at the start of Q2) and Research Scientist roles.
- Build the Machine Learning Platform

Department: Technology
# Platform Evolution

## MTP Outcomes

We will build tooling for internal and external development and reuse of code and content.

## MTP Metrics

<table>
<thead>
<tr>
<th>Y2 Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>80% increase in structured data used (uptake) across wikis. <strong>Baseline:</strong> 87M of pages across Wikimedia projects use Wikidata as of April 2020.</td>
<td>16% increase in percentage of use from 4/20 baseline</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Y2 Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% increase in non-text (e.g. Commons) content used across wikis. <strong>Baseline:</strong> 31.2M items from Commons are used across Wikimedia projects as of April 2020.</td>
<td>0.7% increase in percentage of use from 4/20 baseline</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Department: Technology
## MTP Outcomes

A secure and sustainable platform that empowers a thriving developer community with the ease of software-as-a-service tooling

## MTP Metrics

<table>
<thead>
<tr>
<th>MTP Metrics</th>
<th>Y2 Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>30% increase of tool maintainers</td>
<td>15% increase from baseline</td>
<td>8% (2033) increase from baseline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Baseline:</strong> 1880 maintainers in Q2 (FY 19/20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10% (4.2 / 5) increase in developer satisfaction</td>
<td>4% (4.0)</td>
<td>Next survey will be conducted in early Q3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Baseline:</strong> 2019 developer satisfaction: 3.8 / 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10% decrease in code review time</td>
<td>4% (18 days)</td>
<td>-5% (20 days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Baseline:</strong> 19 days in June 2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20% decrease in outstanding code reviews</td>
<td>4% (1043 reviews)</td>
<td>15% (918 reviews)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Baseline:</strong> 1088 code reviews in June 2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MTP Priority
OKRs
Objective:

The Wikimedia movement has the tools and knowledge to identify and respond to abuse, misinformation, and disinformation campaigns, in order to more efficiently and effectively improve the quality of content, defend the projects and retain the public’s trust.

We build the **technologies** that empower the editor and patroller communities enforce content policies such as **verifiability**.

We build and sustain **relationships** with academic and industry partners to more effectively address disinformation.

We coordinate and report on existing and future **disinformation projects** within the Wikimedia Foundation.

**Target quarter for completion:** Q4 FY20-21
**OKR Change: Content Integrity**

**Original**

**KR2**: Complete 4 product integrations (e.g. link recommendations) of internally built machine learning models and services for improving content integrity and deploy 7 new community-driven models that extend our existing content integrity approach.

**Proposed**

**KR2**: Complete 4 product integrations (e.g. link recommendations) of internally built machine learning models and services for improving content integrity.
## Content Integrity

### Key Results

| KR1: Develop 1 model to identify misinformation (by Q3) and deliver 4 milestones towards 1 model to understand the diffusion of content on the Wikimedia projects (by Q4). Baseline: 0 milestones |
|---|---|---|---|---|---|
| Q1 Status | Q2 Status | Q3 Status | Q4 Status |
| 4 | - | - | - |

| KR2: Complete 4 product integrations (e.g. link recommendations) of internally built machine learning models and services for improving content integrity Baseline: 0 models in the new ML platform |
|---|---|---|---|---|---|
| Q1 Status | Q2 Status | Q3 Status | Q4 Status |
| 4 | - | - | - |

| KR3: Coordinate and report quarterly on the disinformation activities across teams, establish a community support forum (by Q3), and participate in 10 external relationships (by Q4) including academia and industry partners. Baseline: 0 |
|---|---|---|---|---|---|
| Q1 Status | Q2 Status | Q3 Status | Q4 Status |
| 10 | 5 | - | - | - |

Department: Technology
Objective:

A new Wikimedia Knowledge Platform is defined, building upon our key technologies, enabling our development teams to deliver value independently, and empowering our communities to share the world’s knowledge in the spaces and formats which reflect their values and cultures.

Work on predictably structuring content and adding semantic meaning (metadata) to that content
  • Completed initial development of canonical data model
  • Completed initial import of 1 wiki into Structured Content Store

Maturing our architecture practice
  • Draft of information architecture created
  • Architecture decision making process aligned with (new) Technical Decision Making Process
  • Modeling with Abstract Wikipedia Team

Completion of API Gateway
  • This is crucial foundational technology that will enable streamlined decoupling of services.

Target quarter for completion: Q4 FY20-21
### Key Results

| KR1 | Reached level 3 of the Architecture Maturity Model (AMM) for at least 85% of capabilities by Q4.  
**Baseline:** 4 capabilities at Level 1 (50%), 4 capabilities at Level 2 (50%) |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>Q1 Status</td>
</tr>
<tr>
<td>move 85% of capabilities to Level 3</td>
<td>37.5% at Level 1</td>
</tr>
<tr>
<td>62.5% at Level 2</td>
<td>37.5% at Level 1</td>
</tr>
</tbody>
</table>

| KR2 | Engineers have an improved understanding of current architecture and target architecture, enabled by the outputs of reaching level 3 for the AMM Architecture Development capability, “Gap analysis, modeling and iterative strategy for reaching a target architecture are completed”, measured quantitatively through surveys in Q1, Q2 and Q4.  
**Baseline:** TBD in Q2 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>Q1 Status</td>
</tr>
<tr>
<td>Baseline TBD</td>
<td>Baseline survey pushed to 3rd week of October</td>
</tr>
</tbody>
</table>

| KR3 | 4 new service components in production delivering new capabilities, enabling and adopting industry standard best practices for architecture, engineering and deployment, allowing for the mitigation of risks for both development teams and operational stakeholders, building trust in our development processes. 1 service in be end of Q2, 2 by end of Q3, and 4 by end of Q4  
**Baseline:** Zero services |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>Q1 Status</td>
</tr>
<tr>
<td>4 services decoupled</td>
<td>50% (2 services)</td>
</tr>
</tbody>
</table>
The situation
A baseline survey of developer understanding of current and future architecture has not been performed yet.

The impact
Baseline data is delayed.

The recommendation
Collect baseline data at the beginning of Q2 and then resurvey in Q3 and Q4.

Department: Technology
Evolutionary Architecture

Natural sciences

Bonding

Chemistry

Atoms sticking together in molecules or crystals are said to be bonded with one another. A chemical bond may be visualized as the multipole balance between the positive charges in the nuclei and the negative charges oscillating about them. More than simple attraction and repulsion, the energies and distributions characterize the availability of an electron to bond to another atom.

A chemical bond can be a covalent bond, an ionic bond, a hydrogen bond or just because of Van der Waals forces. Each of these kinds of bonds is ascribed to some potential. These potentials create the interactions which hold atoms together in molecules or crystals. In many simple compounds, valence bond theory, the Valence Shell Electron Pair Repulsion model (VSEPR), and the concept of oxidation number can be used to explain molecular structure and composition.

An ionic bond is formed when a metal loses one or more of its electrons, becoming a positively charged cation, and the electrons are then gained by the non-metal atom, becoming a negatively charged anion. The two oppositely charged ions attract one another, and the ionic bond is the

Research methods

Genetics

DNA can be manipulated in the laboratory. Restriction enzymes are commonly used enzymes that cut DNA at specific sequences, producing predictable fragments of DNA. The fragments can be visualized through use of gel electrophoresis, which separates the fragments according to their length.

The use of ligase enzymes allows DNA fragments to be connected. By binding (“ligating”) fragments of DNA together from different sources, researchers can create recombinant DNA, the DNA often associated with genetically modified organisms. Recombinant DNA is commonly used in the context of plasmids, short circular DNA molecules with a few genes on them. In the process known as molecular cloning, researchers can amplify the DNA fragments by inserting plasmids into bacteria and then culturing them on plates of agar to isolate. Stains of bacteria cells—“cloning” can also refer to the various means of creating clones (“clonal” organisms).

DNA can also be amplified using a procedure called the polymerase chain reaction (PCR). By using specific short sequences of DNA, PCR can isolate and exponentially amplify a targeted region of DNA. Because it can amplify from extremely small amounts of

Redox

Chemistry

Redox (reduction-oxidation) reactions include all chemical reactions in which atoms have their oxidation state changed by either gaining electrons (reduction) or losing electrons (oxidation). Substances that have the ability to oxidize other substances are said to be oxidizing agents, oxidants or oxidizers. An oxidant removes electrons from another substance. Similarly, substances that have the ability to reduce other substances are said to be reductive and are known as reducing agents, reductants, or reducers.

A reductant transfers electrons to another substance and is thus oxidized itself.

Genetic code

Genetics

Genes generally express their functional effect through the production of proteins, which are complex molecules responsible for most functions in the cell. Proteins are made up of one or more polypeptide chains, each of which is composed of a sequence of amino acids, and the DNA sequence of a gene (through an RNA intermediate) is used to produce a specific amino acid sequence. This process begins with the production of an RNA molecule with a sequence matching the gene’s DNA sequence, a process called

Atom

Chemistry

The atom is the basic unit of chemistry. It consists of a dense core called the atomic nucleus, surrounded by an electron cloud. The nucleus is made up of positively charged protons and uncharged neutrons (together called nucleons), while the electron cloud consists of negatively charged electrons which orbit the nucleus. In a neutral atom, the negatively charged electrons balance out the positive charge of the protons. The nucleus is dense; the mass of a
Efficacy & Resilience

OKRs
Front Line Defenses

Objective:

Our infrastructure and data are staffed, secured and provisioned appropriately in each area to successfully prevent or handle malicious attacks, the unavailability of one system component, or the unavailability of a staff member.

We are actively interviewing candidates for one of the Single Point of Failure (SPoF) positions (in SRE Service Ops), and are about to kick off two additional hiring processes for two other SPoF positions (in Data Persistence and in Traffic) shortly. The unexpected setback of one of our completed SRE team managerhirings falling through has caused us to reorder our original hiring schedule, to better optimize our available hiring and onboarding bandwidth and support and maximize our ability to hire successfully and on time.

We will start early with the initial stages of planning our second EU data center (KR2), ahead of schedule, in Q2.

We are maturing our ability to identify threats and incorporate the concept of risk into our cybersecurity practices.

Target quarter for completion: Q1 FY21-22

Department: Technology
**Front Line Defenses**

**Key Results**

**KR1:** We will plan (by end of Q3), build (Q4) a second EU data center, to better serve EMEA users (by end of FY21-22 Q1).
**Baseline:** one EU data center

<table>
<thead>
<tr>
<th>Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two EU data centers</td>
<td>(planning not started yet)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**KR2:** The number of staff members solely responsible for a system or piece of software in production is reduced by 50%, from 8 to 4, by end of Q4.
**Baseline:** 0 SPoF positions filled

<table>
<thead>
<tr>
<th>Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hire for 4 SPoF positions</td>
<td>0% filled</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>1 hiring process in final stages</td>
<td>-</td>
</tr>
</tbody>
</table>

**KR3:** Implement a threat identification and risk treatment program (Q1) and deploy effective countermeasures for the top 2 threats and risks per quarter thereafter.
**Baseline:** Partial risk management policy and 0 threat intelligence feeds.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Q1 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 threat and risk countermeasures deployed</td>
<td>Completed Q1 items</td>
</tr>
</tbody>
</table>

Department: Technology
Objective:

Our technical community is thriving and has a clear, consistent means to discover, build, and deploy applications that support community workflows, invent new forms of content creation and consumption, and leverage Wikimedia's APIs and data beyond the core wiki experience.

We have started with our work on the Toolhub catalogue project and are exploring new ways to foster collaboration, including setting up an advisory council of staff and community members, weekly progress reports, and a decision record.

PAWS Kubernetes rebuild: We made significant improvements to our Jupyter notebooks deployment PAWS. PAWS enables users with little programming skills to perform automated one time tasks on the Wikimedia projects, or to analyse and visualise data.

Building upon lessons learned from the first year of Small Wiki Toolkits, we are planning (virtual) regular regional technical workshops, starting with the South Asian region in collaboration with Indic TechCom.

Target quarter for completion: Q4 FY 21/22
## Technical Community Building

### Key Results

<table>
<thead>
<tr>
<th>KR1: Communities find the tools that they need through the new Toolhub catalog system (technical plan Q1, working prototype Q2, MVP Q4), and developers create more diverse solutions using a user-extensible, container-based default deployment process (working prototype Q3, running at least 1 workflow by Q4) in Toolforge.</th>
<th>Year Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toolhub MVP, 1 workflow in new deployment process</td>
<td>Q1 goal complete</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Baseline:** n/a

<table>
<thead>
<tr>
<th>KR2: A 10% increase in number of tool maintainers (4% by end of Q2) speaks to a vibrant ecosystem of technical contributors, supported by an iterative model and practice of community and capacity building (Q1 draft, Q4 MVP) which has been refined through 3 initiatives in focused outreach to technical communities (Q1-Q4).</th>
<th>Year Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% increase in number of tool maintainers, MVP model of community and capacity building</td>
<td>3% (2033), draft concept</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Baseline:** 1974 tool maintainers

<table>
<thead>
<tr>
<th>KR3: An organization strategy for key technical documents informs a continuing roadmap based on a process of drafts (Q1) refined by consultation with staff (Q2) and community input (Q3) and a prototype of a single entry point to lower barriers finding existing documentation (Q4).</th>
<th>Year Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prototype for a single entry point for technical documentation</td>
<td>Q1 goals complete</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Baseline:** n/a

Department: Technology
Objective:

Engineering teams at WMF have a shared understanding of development velocity, production health, and code quality, and they develop commitments and workflows for improving overall code health.

The purpose of this Objective is to streamline and strengthen our development, deployment, and hosting practices to improve the daily lives of our technical community.

We’re proud of the significant progress made by several teams this past quarter — to organize SLO (service level objective) and Error Budget definition;, organize a community-wide consultation, and build the foundation for MediaWiki on Kubernetes — there are many challenges ahead.

**Target quarter for completion:** Q4 FY20-21
OKR Change: Production Quality

Original

**KR3:** Evolve and replace our Continuous Integration and Review systems with 1 project moved by end of Q2 and 5 additional projects moved by Q3. In parallel, 70% of Wikimedia developed application layer production service traffic is served by the Deployment Pipeline in Q3 and 95% by Q4.

Proposed

**KR3:** Evaluate and shepherd a consultation and best practices recommendations on a potential move to GitLab for code review by the end of Q2. In parallel, 70% of Wikimedia developed application layer production service traffic is served by the Deployment Pipeline in Q3 and 95% by Q4.
## Production Quality

### Key Results

**KR1:** Evangelize, implement tooling for (by end of Q1) and define and implement Service Level Objectives (SLO) and Error Budgets for our top 10 services and systems (Q2: 2 services; Q3: 4 services; Q4: 4 services) and report and iterate on them with product owners on a quarterly basis to optimize the balance of speed of innovation and reliability.

**Baseline:** 0 services with SLOs & Error Budgets defined

<table>
<thead>
<tr>
<th>Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 services with SLOs and error budgets</td>
<td>0 services</td>
<td>Developed SLO definition worksheet, Technical SLO baseline work completed</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**KR2:** Educate teams on and define Code Health Objectives for our production-deployed code repositories (20% in Q1, 40% in Q2, 70% in Q3, 100% in Q4) and report and iterate on them with code owners on a quarterly basis.

**Baseline:** 0% coverage of CHO (Code Health Objectives)

<table>
<thead>
<tr>
<th>Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% coverage</td>
<td>17% of deployed repos have CHO identified</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**KR3:** Evaluate and shepherd a consultation and best practices recommendations on a potential move to GitLab for code review by the end of Q2. In parallel, 70% of Wikimedia developed application layer production service traffic is served by the Deployment Pipeline in Q3 and 95% by Q4

**Baseline:** 27k request per second (rqs) *(baseline was measured in FY1920Q4 - eqiad usage)*

<table>
<thead>
<tr>
<th>Goal</th>
<th>Q1 Status</th>
<th>Q2 Status</th>
<th>Q3 Status</th>
<th>Q4 Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code Review decision, 95% of traffic</td>
<td>GitLab consultation in progress and on-track; 54% of traffic</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Department: Technology
## Drill Down: Production Quality

<table>
<thead>
<tr>
<th>The situation</th>
<th>The impact</th>
<th>The recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The MediaWiki on Kubernetes work is still in the very early stages and we are discovering new challenges to address.</td>
<td>The cross-team collaboration is working hard to find those challenges together early.</td>
<td>We need continued time and attention from all teams involved. Having a unified team is under discussion to help provide that momentum.</td>
</tr>
</tbody>
</table>
Department Update
New Hires

**SRE**
- Lukasz Sobanski

**Analytics Engineering**
- Razzi Abuissa

**Scoring**
- Tobias Klausmann

**Architecture**
- Diana Montation
- Moriel Schottlender (internal transfer)
Anniversaries  (July - September)

14 years
Mark Bergsma

9 years
Chris Johnson
Aaron Schulz
Jeff Green

8 years
Dan Andreescu
Dan Zahn
Andrew Bogott

7 years
Bryan Davis

6 years
Marcel Ruiz Forns

5 years
Peter Hedenskog
Trey Jones

4 years
Manuel Arostegui
Riccardo Coccioli

3 years
Miriam Redi
Diego Saez-Trumper
Cindy Cicatele

2 years
Daniel Kinzler
Scott Bassett
Effie Mouseli
Cole White
Bill Pirkle

1 year
Martin Gerlach
Kevin Bazira
Dallas Wisehaupt
Alex Paskulin
Hieu Pham
Sukhbir Singh
Grant Ingersoll
What we’ve done and what we will do
Supporting wins

**Service Ops**: Data center switchover was uneventful and quick

**Data Persistence**: new db testing environment for Puppet

**Data Center Ops**: Reduced OpEx costs of 11% (~$21k/month) by locking in vendor renewals

**Platform Engineering**: API Portal MVP launched, API Gateway & rate limiter in production

**Security**: Using CAPTCHA without decreasing security or privacy

**Performance**: Building consensus on active-active MediaWiki project ("Multi-DC")

**RelEng**: Gitlab community consultation to ensure a more equitable review system

**FR-Tech**: Supported the most complex campaign ever while exceeding goals

**Analytics**: Enabled even more complex queries on Wikistats; added Canary Events

**Search**: WDQS streaming updater updates, working collaboratively to do task estimations

**Architecture**: First full wiki import into Structured Content Store; became a team!

**Traffic**: Eliminated 40+ backported Varnish patches while increasing privacy & security

**Infra Foundations**: Automation & single sources of truth == less manual toil, fewer mistakes

**WMCS**: Ceph rolled out - migrated over 150 virtual machines (VM’s)

**DevAdvocacy**: Collaboration and communication pays off
Challenges *(aka our new normal)*

- Delays in shipping hardware due to supply chain challenges requires increased planning cycles, injuries to data center personnel
- Capacity for daily work still stretched thin on some teams due to global pandemic, fires, 2020 in general
- Software always has bugs 😞
- Update our thinking on how we do technical decision making
- Mobile device lab: trial phase vs production caused various breakages with vendor (Kobiton)
- Deployment of machine learning models that require one-off solutions
Upcoming

- Cross-team planning for Mediawiki migration to Kubernetes (RelEng, PET, Service Ops)
- Eliminating blockers and expanding services by paying down technical debt
- Get better at dealing with ad hoc requests and not planning too much
- Announce Gitlab consultation decision
- Figuring out how to implement CAPTCHA while maintaining security and privacy
- Toolhub working prototype up and running
- Centralizing data collection and analysis (sandbox for Data³)
- Finalize artifacts for structured content store
- Updating Hadoop to be fully open sourced (Big Top)
- Get new Flink-based WDQS streaming updater productionized
- Defining our Department Vision and Values
- Keeping on blogging!
- Build a modern machine learning training, management and deployment infrastructure
Questions