Defining our Tech Vision and Values

https://office.wikimedia.org/wiki/Technology/Technology_Mission,_Values_%26_Vision
ion

https://en.wikipedia.org/wiki/Sigma_Octantis
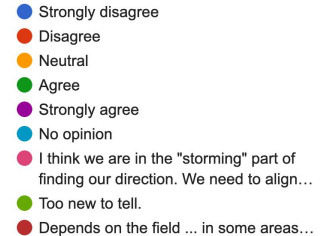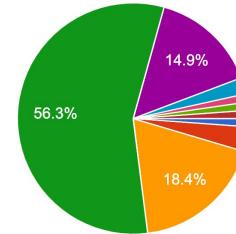
Tech Check-in Survey

- **Survey across variety of topics:**
  - Meetings, voice, management feedback, big picture (e.g. strategy)

- **My top three takeaways:**
  - Most people consider the department healthy and headed in the right direction, but there are a number of people in the neutral category and a number of folks concerned over toxic behavior
  - Our ability to communicate & collaborate effectively is top of mind in the free text comments (24)
  - Desire for larger, longer term strategy and shared goals (8)

I think the Tech department is headed in the right direction
87 responses

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree
- No opinion
- I think we are in the "storming" part of finding our direction. We need to align…
- Too new to tell.
- Depends on the field … in some areas…

56.3%
18.4%
14.9%

"I'm always a bit apprehensive when we put the banners back up for new year since they had been down for a bit. But the 30th and 31st had no issues and was quiet."

- Christine Stone, FR-Tech Engineer

"The quietest fundraising season yet"

- FR-Tech Engineer

Platform Evolution

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

Great progress on the Machine Learning (ML) Platform: key infrastructure decisions were made, hardware procured, new ML Platform design published. Steady progress on content integrity including newly hired research scientist. US election task force delivering on it's program with no major incidents. First draft of Target Architecture has been created - evolution of our architecture has been eased through continued improvements to developer tooling and increased testing.

OKRs

Content Integrity	
Evolutionary Architecture	

Actions

- Build the MVP ML infrastructure and deploy first models

- Hire the Director of Anti-disinformation and Anti-disinformation Manager roles

- Socialize Target Architecture MVP and gather feedback

Department: Technology

Platform Evolution

MTP Outcomes	MTP Metrics	Y2 Goal	Q1 Status	Q2 Status	Q3 Status	Q4 Status
We will build tooling for internal and external development and reuse of code and content	A 80% increase in structured data used (uptake) across wikis. **Baseline:** 87M of pages across Wikimedia projects use Wikidata as of April 2020.	80% increase	16% increase in percentage of use from 4/20 baseline	26% increase from baseline	-	-
	An 10% increase in non-text (e.g. Commons) content used across wikis. **Baseline:** 31.2M items from Commons are used across Wikimedia projects as of April 2020.	10% increase	0.7% increase in percentage of use from 4/20 baseline	1.8% decrease from baseline	-	-

Department: Technology

Platform Evolution Metrics

MTP Outcomes	MTP Metrics	Y2 Goal	Q1 Status	Q2 Status	Q3 Status	Q4 Status
A secure and sustainable platform that empowers a thriving developer community with the ease of software-as-a-service tooling	30% increase of tool maintainers **Baseline:** 1880 maintainers in Q2 (FY 19/20)	15% increase from baseline	8% (2033) increase from baseline	9.9% (2067) increase from baseline		
	10% (4.2 / 5) increase in developer satisfaction **Baseline:** 2019 developer satisfaction: 3.8 / 5	4% (4.0)	Next survey will be conducted in early Q3	Next survey will be conducted in early Q3		
	10% decrease in code review time **Baseline:** 19 days in June 2019	4% (18 days)	-5% (20 days)	-21% (22 days)		
	20% decrease in outstanding code reviews **Baseline:** 1088 code reviews in June 2019	4% (1043 reviews)	15% (918 reviews)	21% (851 reviews)		

Department: Technology
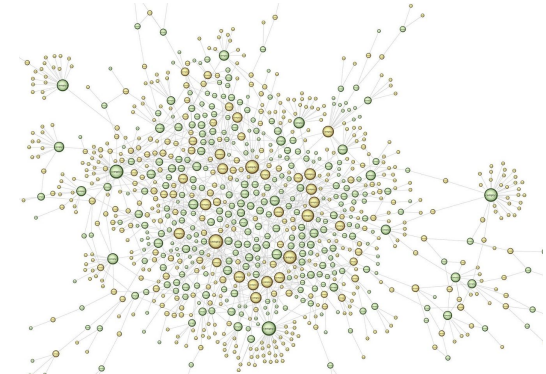
Content Integrity

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.

Created models to detect inconsistencies between Wikidata and Wikipedia and understand the diffusion of content across Wikipedia communities.

Designed the infrastructure for serving Machine Learning models to detect Abuse, misinformation, and disinformation.

Hired for the Research Scientist - Disinformation role.
Continue interviews for the Anti-Disinformation Director position.

Target quarter for completion: Q4 FY20-21

The OrangeMoody network of socks (ongoing)

Department: Technology

Content Integrity

Key Results	Year Goal	Q1 Status	Q2 Status	Q3 Status	Q4 Status
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	4	1	2	-	-
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	4	0	0	-	-
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	10	5	5	-	-

Department: Technology

Evolutionary Architecture

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.

Design system-level target architecture that model the mission
- Presented multiple, integrated models for a holistic approach
- Initial model of platform with event-based interactions and study group formeds

Deliver exploratory prototype demo'ed last quarter
- Shared summary document cross-functionally to create understanding and alignment
- Share demo for feedback

Establishing architecture practice with other teams
- Design and model an systems architecture repository with Abstract Wikipedia Team
- Collaborate with Structured Data team to adopt patterns established by the prototype
- Contributing architecture view to the overall Product Strategy Working Group

Target quarter for completion: Q4 FY20-21

Department: Technology

Evolutionary Architecture

Key Results	Goal	Q1 Status	Q2 Status	Q3 Status	Q4 Status
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%)	move 85% of capabilities to Level 3	37.5% at Level 1 62.5% at Level 2	100% at L2 28.5% at L3	-	-
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	Baseline TBD	Baseline survey pushed to 3rd week of October	Survey sent Jan 2021	-	-
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	4 services decoupled	50% (2 services)	50% (2 services)	-	-

Department: Technology

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've started planning for our 2nd EMEA data center and *analyzed options* for EU data center locations against requirements, and presented a *shortlist of candidate cities* for input and investigation by the Legal team.

We've strengthened our MediaWiki & Kubernetes knowledge & capacity in the SRE Service Ops team; **one** SPOF staff member position filled, **four** additional SPOF positions are in active hiring.

Continue to add maturity to our cybersecurity capabilities to address risk and threat stemming from disinformation. Security incident response, vulnerability management and privacy.

Target quarter for completion: Q1 FY21-22

Front Line Defenses

Key Results	Goal	Q1 Status	Q2 Status	Q3 Status	Q4 Status
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	Two EU data centers	1 EU data center (planning not started yet)	1 EU data center Shortlist of cities prepared	-	-
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	Hire for 4 SPoF positions	0% filled 1 hiring process in final stages	25% filled 4 SPOF positions in active hiring	-	-
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.	6 threat and risk countermeasures deployed	Completed Q1 items	4 countermeasures deployed		

Department: Technology

Katherine Maher ✔ @krmaher · Nov 25, 2020
Oh man, @Wikimedia SREs.

▶ HOLD ON TO YOUR BUTTS

AFP AFP News Agency ✔ @AFP
Replying to @AFP
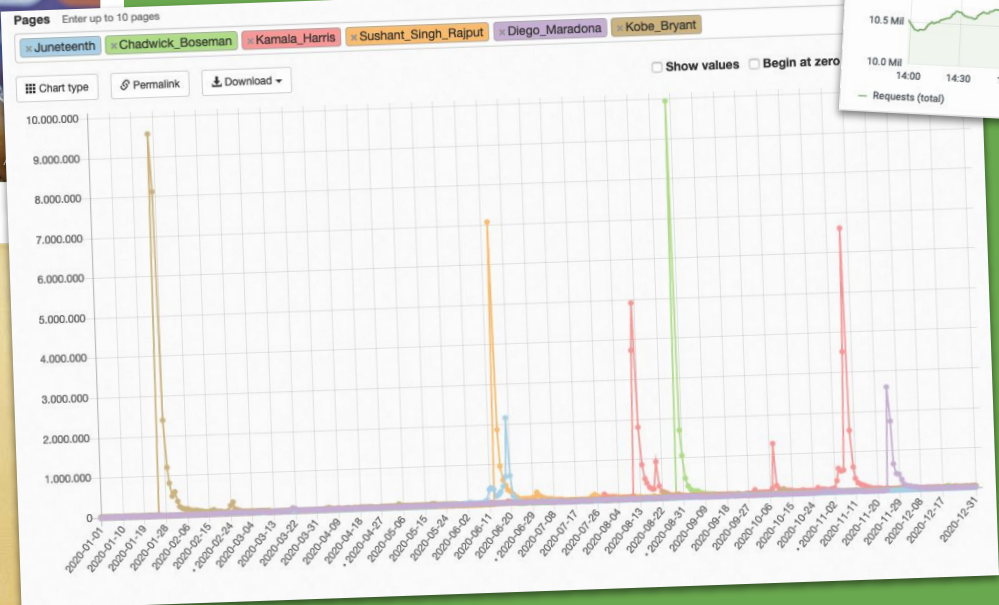#BREAKING Football legend Maradona dead

#AFPSports

Jaime Crespo
@jynus

▶ WE'VE GOT THIS!

Over the past year, we've invested in making our services more resilient to load/request spikes.

Due to various enhancements in the application and CDN (1, 2), network and observability layers have improved performance and reliability in certain edge cases.

Maradona request spike

This seems to be bearing fruit.

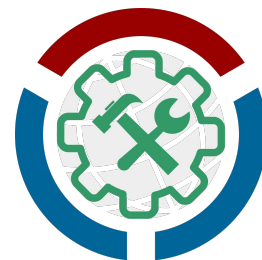# Technical Community Building →

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.

A [working prototype](#) of the [Toolhub](#) catalogue project is available for testing. This enables us to gather early feedback on the application. The proof of concept for the new deployment workflows in Toolforge has been completed. We have adapted the timeline for Q3 and Q4 work on the new deployment workflows in Toolforge to balance out unexpected resource gaps.

We have reached out to South Asian, ESEAP and Kurdish communities to explore potential and need for technical workshops. First workshops with South Asian and Kurdish communities are planned for Q3.

We have conducted exploratory conversations with WMF and WMDE teams around technical documentation workflows and needs. We moved the analysis and summary into Q3, and expect to be back on track by the end of Q3.

Target quarter for completion: Q4 FY 21/22

Technical Community Building

Key Results	Year Goal	Q1 Status	Q2 Status	Q3 Status	Q4 Status
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 Q4) in Toolforge. **Baseline:** n/a	Toolhub MVP, working prototype for new deployment process	Q1 goal complete	Q2 goals complete	-	-
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). **Baseline:** 1974 tool maintainers	10% increase in number of tool maintainers, MVP model of community and capacity building	3% (2033), draft concept	4.9% (2067)	-	-
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). **Baseline:** n/a	Prototype for a single entry point for technical documentation	Q1 goals complete	Interviews with staff in progress, not completed	-	-

Department: Technology

https://toolhub-demo.wmcloud.org/

Production Quality

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.

Most of this work is highly cross-team and cross-department dependent *(Service Level Objectives and Code Health Objectives {SLOs & CHOs})* and we want to thank those who have participated thus far for their engagement. We look forward to more engagement in the remainder of the year.

The GitLab consultation was completed in Q2 and we are now beginning the work to setup our self-hosted installation.

The Deployment Pipeline project continues to move forward but also uncover added work along the way. We expect attaining our goal this fiscal but it will be very close.

Target quarter for completion: Q4 FY20-21

Department: Technology

Example: etcd SLOs

	SLO	Reporting period: Sept 1 - Nov 30 2020		
		SLI	Error budget used	SLO met?
Availability SLO	**99.9%** of requests are successful (without errors)	99.99116%	0.01%	✔
Latency SLO	**99.8%** of requests will be under 32 ms	99.8999%	50.0%	✔

SLOs: Service Level Objectives
etcd: is an open source distributed key-value store used to hold and manage the critical information that distributed systems need to keep running. Most notably, it manages the configuration data, state data, and metadata for Kubernetes, the popular container orchestration platform

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Production Quality

Key Results	Goal	Q1 Status	Q2 Status	Q3 Status	Q4 Status
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	10 services with SLOs and error budgets	0 services Developed SLO definition worksheet, Technical SLO baseline work completed	1 service	-	-
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 CHOs *(Code Health Objectives)*	100% coverage	17% of deployed repos have CHOs identified	28% of deployed repos have CHOs identified	-	-
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)*	Code Review decision, 95% of traffic	GitLab consultation in progress and on-track; 54% of traffic	GitLab consultation completed; 68% of traffic		

Department: Technology

New Hires & Anniversaries

New Hires

Research
Fabian Kaelin

SRE Service Ops
Kunal Mehta

Platform Engineering
Gabriele Modena

Data Science & Engineering
Tajh Taylor

Wikimedia Cloud Services
David Caro

Anniversaries

12 years
Ariel Glenn

9 years
Antoine Musso

8 years
Andre Klapper
Željko Filipin

7 years
Andrew Green

6 years
Joaquin Oltra Hernandez
Elena Tonkovidova
Moriel Schottlender

4 years
Erika Bjune
Srishti Sethi
Francisco Dans

5 years
Petr Pchelko

3 years
Arturo Borrero
Jack Gleeson

2 years
Clara Andrew-Wani
Lars Wirzenius
Isaac Johnson
Nicholas Rusnov
Jeena Huneidi
Chris Danis
Christine Stone

1 year
Reuven Lazarus
Nikki Nikkhoui
Maryum Styles
Zbyszko Papierski

#wikilove

Wikilove

T&S and Legal

For all of the work that went into preparing disinfo table top exercises

Partnerships and Product

For all the awesome collaborative work around hcaptcha

Disinformation task group

For just being awesome in general <3

Advancement, Ops, FP&A and T&C
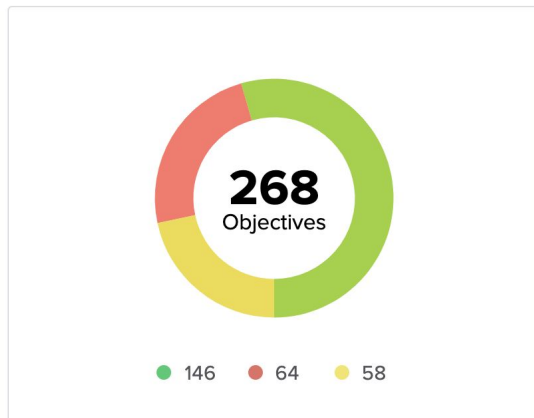
For raising the dough and recalibration

Recruiting

For all the help on bringing on hiring, opening reqs, & finding a great and diverse candidate pool
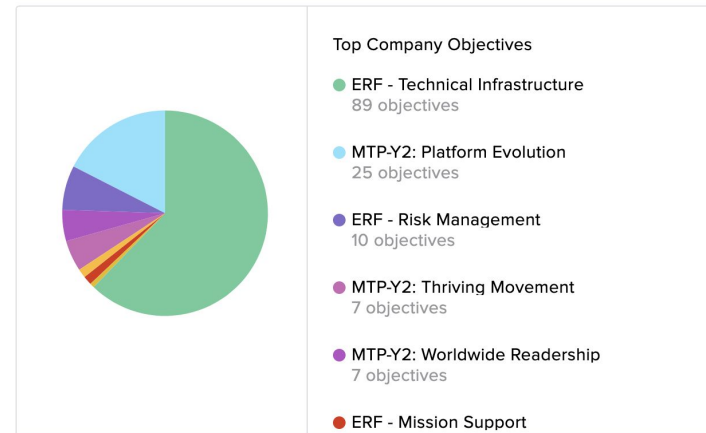
Product Dept

For the Vue.js working group and the product platform vision/roadmap work

WMF Travel Team!

For helping organize and contribute to the first ever virtual Tech Dept Fun Day!

Department OKR Status *Q2*

Objectives Grouped by Risk

268 Objectives

- 146
- 64
- 58

Objectives Contributing to Top Company Objectives

Top Company Objectives

- ERF - Technical Infrastructure
  89 objectives
- MTP-Y2: Platform Evolution
  25 objectives
- ERF - Risk Management
  10 objectives
- MTP-Y2: Thriving Movement
  7 objectives
- MTP-Y2: Worldwide Readership
  7 objectives
- ERF - Mission Support

Progress Over Time for Objectives in this View

55%

100							
90							
80							
70							
60							
50							
40							
30							
20							
10							

4 Oct   18 Oct   1 Nov   15 Nov   29 Nov   13 Dec   27 Dec   10 Jan

Categories ?

Category	Value
Team/Department	100
Individual	81
Team	56
Annual Plan OKR	28
Department	4
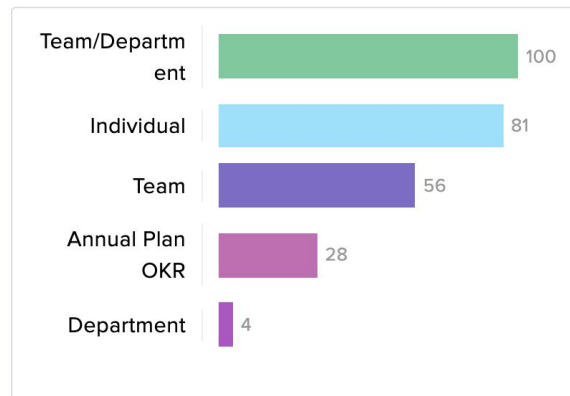
Challenges

Implementing Kubernetes (k8s) and Docker are larger projects than anticipated, in terms of understanding

Unanticipated WikiReplicas issues with tools and temporary resources

Space concerns in our primary data center (eqiad) as well as access to data centers relative to pandemic

Societal unrest

COVID-19

2020 in general

Supporting Wins

Service Operations

Kubernetes upgrade - paved way for Mediawiki (M7i) to be in k8s production soon!

Data Persistence

Deployed Orchestrator *(new DB monitoring system)* to replace old solution

Data Center Operations

Closed 132 tasks; closer to deciding final location for 2nd EMEA caching site

Security

16 privacy reviews, 3 tabletop exercises *(and more!)* - advancing security training

Search Platform

Supported Growth team for AddLink, WDQS streaming updater now in production

Machine Learning Platform

Migrated event logging to Modern Event Platform; stream.wikimedia.org launched

Traffic

Continued increase in user privacy & security, finished 3 part blog series about CDN arch

Infrastructure Foundations

Paid down lots of tech debt; unblocked M7i appserver OS upgrade *(ICU library)*

Observability

Responses to incident management survey provided useful insight on future priorities
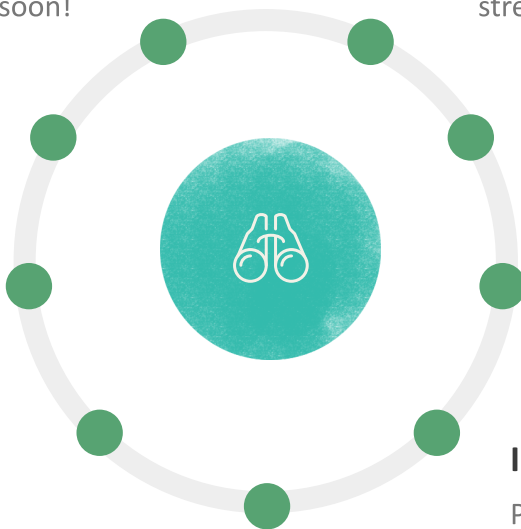
moar Supporting Wins

Platform Engineering

Helped stabilize maps, collab w/Tech and Product

Performance

Clarity on IE11, close to getting Thumbor on k8s with CI image on Blubber

Quality & Test Engineering

Team knowledge is strong, even though testing ecosystems are fragmented

WikiMedia Cloud Services

All VM's running on ceph, helped address data service needs with Data Engineering

Release Engineering

Gitlab consultation completed; shared understanding with community on code reviews

Machine Learning Platform

Released 18 month roadmap for Lift Wing

Research

New hires == capacity! Readers interact with images 10x more than citations

Developer Advocacy

Supporting diversity in Open Source: 7 interns have been accepted in Outreachy

Architecture

Teams across Org have similar architectural challenges, produced systems thinking workshops
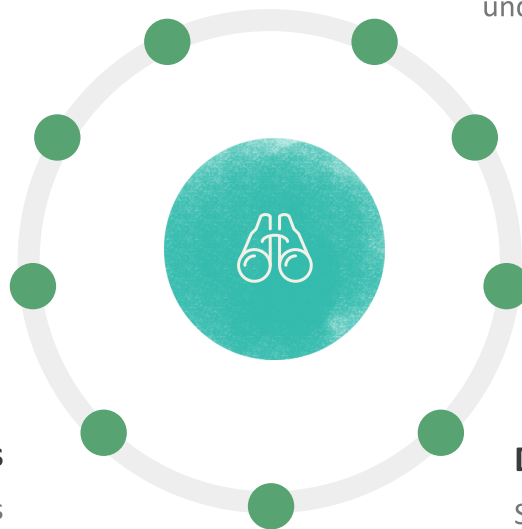
Questions?

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Appendix

Self-Organized and Online Experiences Schedule [edit | edit source]

Time Zone (# staff)									Self-Organized	Online Experiences	Hangout Rooms	Google Meet
PST (29%)	MST (5%)	CST (9%)	EST (21%)	GMT (5%)	CET (25%)	EET (4%)	EAT (1%)	AEST (1%)				
5:00	6:00	7:00	8:00	13:00	14:00	15:00	16:00	23:00	(add your self-organized activity here)	True v. False Funny Historical Game (25") (13:00 - 14:00 GMT) JOIN HERE	Colombian Coffee from Bean to Cup (25") (13:00-14:00 GMT) JOIN HERE	
5:30	6:30	7:30	8:30	13:30	14:30	15:30	16:30	23:30	(add your self-organized activity here)			
6:00	7:00	8:00	9:00	14:00	15:00	16:00	17:00	0:00	(add your self-organized activity here)	Break		
6:30	7:30	8:30	9:30	14:30	15:30	16:30	17:30	0:30	(add your self-organized activity here)	Kenyan Cuisines, Culture & Music (30") (14:30-16:00 GMT) JOIN HERE	Meet my Bees (30") (15:00-16:00 GMT) JOIN HERE	
7:00	8:00	9:00	10:00	15:00	16:00	17:00	18:00	1:00	(add your self-organized activity here)			
7:30	8:30	9:30	10:30	15:30	16:30	17:30	18:30	1:30	(add your self-organized activity here)			
8:00	9:00	10:00	11:00	16:00	17:00	18:00	19:00	2:00	Speed Dating organizer: Leila JOIN HERE	(add your self-organized activity here)	Break	
8:30	9:30	10:30	11:30	16:30	17:30	18:30	19:30	2:30		(add your self-organized activity here)	Escape the Desert Island (30") (16:30-17:00 GMT) JOIN HERE	
9:00	10:00	11:00	12:00	17:00	18:00	19:00	20:00	3:00	Acceptance criteria for backup software	OpenStreetMap Mapping Party JOIN HERE	Mysteries & Magic in Peru (30") (17:00-18:00 GMT) JOIN HERE	
9:30	10:30	11:30	12:30	17:30	18:30	19:30	20:30	3:30	Virtual Toasting w/Grant @ :45 after the hour	(add your self-organized activity here)	Break	
10:00	11:00	12:00	13:00	18:00	19:00	20:00	21:00	4:00	One Good Thing (meet) organizer: Axel	Learn to Cook Mexican Salsas (30") (18:00-19:30 GMT) JOIN HERE		
10:30	11:30	12:30	13:30	18:30	19:30	20:30	21:30	4:30	(add your self-organized activity here)		Break	
11:00	12:00	13:00	14:00	19:00	20:00	21:00	22:00	5:00	Ugly Sweater Appreciation Organizer: Trey			
11:30	12:30	13:30	14:30	19:30	20:30	21:30	22:30	5:30	(add your self-organized activity here)			
12:00	13:00	14:00	15:00	20:00	21:00	22:00	23:00	6:00	Tour Mukunda's Machine Shop Organizer: mmodell Join: google meet Notes: User:MModell (WMF)/Tour Mukunda's Machine Shop		Haunted New Orleans (30") (20:00-21:10 GMT) JOIN HERE	
12:30	13:30	14:30	15:30	20:30	21:30	22:30	23:30	6:30	Cats Meeting Cats Organizer:Jeena		Break	
13:00	14:00	15:00	16:00	21:00	22:00	23:00	24:00	7:00	Play Jackbox Games (Drawful and Fibbage) Join Meet. Note: You'll need a phone or tablet in order to play. Instructions here.			
14:00	15:00	16:00	17:00	22:00	23:00	24:00	01:00	8:00	Virtual Toasting w/Grant @ 2200 UTC / 1700 EST			

Kumospace / Online Gaming

Welcome to Tech Fun Day 2020

Enter a room

The Festivus Lounge

Festopolis Game Hall
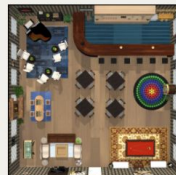
Smuggler's Cove

Uluwatu Villa

natalia luna
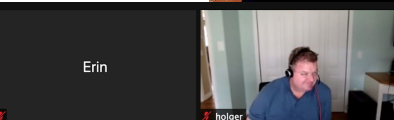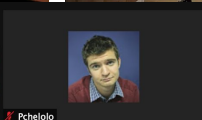
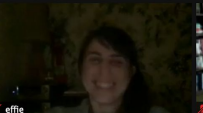Natalia Luna

Erin

holger

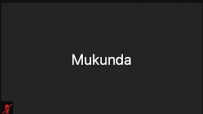Pchelolo

Leila Zia (Wikimedia Foundation)

Grant Ingersoll

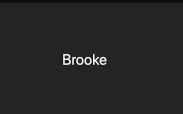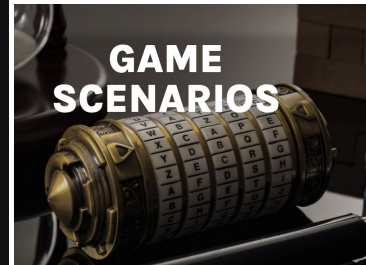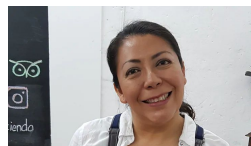Deb Tankersley

effie

Dave

Dylan

Mukunda

Daniel Z

tyler

Brooke

GAME SCENARIOS

1st ever virtual Technology Department Fun Day!

"Self-organized options, esp. speed dating, encourage meeting colleagues. Online experiences were very cool, too"

"I thought it was done well -- no "requirements" but space was made to relax and meet a bunch of people and ability to self-organize as well"

"Honestly, I was a touch skeptical going in, but I thought the whole thing went pretty well and it was a genuinely nice way to decompress a bit before the holidays and get to know at least a few people better"

"*Speed Dating* was a lot of fun and introduced me to a number of people I didn't know before. Same with *Cats Meeting Cats*, which was a smashing success!"

"Thank you so much to everyone who put time and care into organizing the event, it was really great and I appreciate everyone involved very much! Yet another reason on the long list of reasons that I feel fortunate to be a part of this team!"

Upcoming work

- ○ Figure out IPV4 space issues (we need moar)
- ○ Create SLO dashboard for metrics and tracking
- ○ Kubernetes upgrade in production, M7i on k8s shellbox and prototype
- ○ Identify metrics to measure knowledge gaps, organize Wiki Workshop 2021
- ○ Systems architecture survey, socialize target architecture model
- ○ Development work on Toolhub MVP, technical workshops with South Asian and Kurdish communities
- ○ New email preference center for Advancement, investigate long term system changes
- ○ FOSDEM21 - web performance track, help migrate Grafana alerts
- ○ Develop a common approach to manage QTE testing activities
- ○ Create a working GitLab install, train more folks on doing their own deploys
- ○ Help implement Image Recommendation Structured Task Project
- ○ Refine content and publish new Security website
- ○ Support Growth and SDAW teams with structured editing tasks
- ○ Hiring and onboarding new people...*getting through 2021*