



**DrupalCon**  
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# Fortune 50 Intranet

Giving Insight Across Internal & 3rd Party Apps

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# About Us

## Project Team Members



**Michael Meyers** @michaelemeyers  
Managing Director

- Over 17 Years in Drupal Community
- VC Backed Startup Founder With Exit
- CTO at Top 50 Website
- Acquia VP DevRel, & Dev Marketing



**Lucas Hedding** @heddn  
Sr. Architect & Engineering

- 10+ Yrs of Drupal, Top 50 Core Contributor
- Maintainer of Migrate Sub-System
- Drupal Core Mentoring Coordinator
- Drupal Security App. Review Admin



**Moshe Weitzman** @moshe-weitzman  
Sr. Architect & Project Lead

- 20 Yrs of Drupal! All Time Top Contributor
- Maintainer of Drush
- Core Maintainer: User, Comment, Bootstrap, etc.
- Drupal Security Team Member







# About Tag1

The Team Global Leaders Trust to Ensure Their Success

The New York Times



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# #Tag1TeamTalks and Blogs

Dive Deeper Into the Topics in This Presentation



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**A Deep Dive Into  
Real Time  
Collaborative  
Editing Solutions**

**#Tag1TeamTalk**

Real-Time Collaboration  
[Tag1.com/Yjs](https://tag1.com/Yjs)



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**Introducing Goose -  
a highly scalable load  
testing framework written in  
Rust**

**#Tag1TeamTalk**

Performance & Scalability  
[Tag1.com/Goose](https://tag1.com/Goose)



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**A Deep Dive on  
Decoupling Applications  
- Decoupled Drupal: Past,  
Present & Future- Part 2**

**#Tag1TeamTalk**

Decoupled Drupal  
[Tag1.com/Decoupled](https://tag1.com/Decoupled)





# What We'll Cover Today

This Was a Massive Project - We'll Highlight a Few Key Aspects

- Overview and Background
- The Project and Organizational Goals
- Prototyping to Prove Concepts, Build Support & Secure Funding
- Features & Functionality - New Frontiers in Drupal
- Questions and Answers





# Overview of the Fortune 50 Intranet

A Very Actively Used Mission Critical System

- 150k+ Employees, 150+ Countries, 20k+ Daily Active Users (17% of Org)
- Teams, Products, Departments - Thousands of Groups aka “Spaces”
- Millions of Content Pages in Dozens of Languages
- 500K+ Files “in” the System, As Many Referenced From Elsewhere



# Challenges and Growing Pains

Highlighting a Few of the Reasons it was Increasingly Detrimental

- Existing System Wasn't Keeping up With the Needs & Pace of Users
- Vendor Failing to Deliver Much Needed Promised Features
- The System Was Getting Slower & Speed Impacts User Engagement
- Users Needed More Control over the Spaces & Content They Created
- Intranets Foster Collaboration, but it Lacked Real-Time Collaboration



# Fostering Innovation in a New Intranet

Don't Fight Change, Responsibly and Proactively Support It

- Teams Adopt & Change SaaS Tools Rapidly, Feeding Innovation
- Internal Tools & Apps are Constantly Being Created To Support Teams
- Tooling Overlap: What Chat is that Team Using? Which File Storage?
- May Work for Small Siloed Teams, Not Global Collaboration at Scale
- How do to Facilitate Independence & Control but Mitigate Downside?





# A Very Long List of “Must Haves”

A Lot of Stakeholders, A Lot of Use Cases, a Lot of Goals

- Open Source: No Lockin, Integrate with, or Build Anything
- Ability to Aggregate & Integrate; Show & Use Data from Any System
- Global AI Meta Search to Find Anything, Anywhere
- Export Data Anywhere & Support Any Device, Natively
- Easily Manage Spaces & Associated Tools (e.g., Create Slack Channel)
- Real-Time Collaboration and Increased Engagement
- Blazingly Fast (<200ms load times) and Always Available



# Demos

The Proof Is In the Pudding

- On a Project, You Are Always Selling Something
- Doing Demos at the End and Regularly During the Sprint
- Makes This Easy
- Always Building Towards the Demo Forces Pragmatic Decisions
  - ◆ What Is the MVP for the Demo?
  - ◆ How Can I Get Feedback?
  - ◆ Is It Working Software? (Some Definition of Working)



# Real-Time collaboration

Facilitating Collaboration Was a Core Goal of the Project



[https://www.youtube.com/watch?v=\\_OwHt1lsyKk](https://www.youtube.com/watch?v=_OwHt1lsyKk)





# 3rd Party Integrations (Box, Slack, etc.)

Goal: One Place to Find All the Things, One Search Across Everything!

- All of These Used oauth2 Authentication
- All Had a Rest API
- Client Wanted to Use System Tokens for Systems Accounts
- Started Auth Integration by Building a Solution For Box, Streamlined and Built For Other Integrations.
- Released As Sandbox Project on Drupal.org



# 3rd Party Integration Continued

Slack

- Built Slack Integration Iteratively. Started With a Small Sandbox App; Not Even on the Client's Enterprise Slack System.
- Did Demos of Rendering Threaded Conversations in a Controller. Started With Hard-Coded Values. Then Integrated W/ Slack.
- Goal Was to List Threads and Pinned Conversations for a Slack Room Generated In a Micro-Site/Space on the Intranet.



# Icon Builder

Small Change With a Really Big Impact

Problem:

- Each of the Micro-Sites Wanted Something to Brand Themselves With
- Every User Was Part of Many Spaces, All Looked the Same In Nav Bar

Solution:

- Using a Collection Of SVG/Webfont Icons Was a Good Place to Start
- Then Mixed In a Select List Of Font and Background Colors

Result:

- Glancing At Your Navigation Bar You Can Find the Space You Needed!

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# Obfuscated URLs

All Urls Referenced By Uuid

- Small Patch to Core
- Might Not Ever Land In Its Current State, but It Is a Small Patch.
- It Is Easy to Maintain.



# LDAP and Groups

## Honor Externally Controlled Group Membership

- LDAP Stands For Lightweight Directory Access Protocol
- A Service In Large Enterprises That Maintains User Accounts, Along With the Roles and Teams They Belong Too
  - ◆ Marketing
  - ◆ “Country-specific coupons” Team
  - ◆ “Improve fuel economy” Team
- Memberships Come and Go In LDAP and Must Be Quickly Reflected In Drupal



# Group Module

- We Built On Top Of the Excellent Group Module.
- By Default, Group Module Stores Group Memberships in the Drupal Database.
- Override the Groupmembershiploader Service
  - ◆ At Login Time, A User's Session Is Populated With List Of LDAP Memberships
  - ◆ Our Groupmembershiploader Maps Those to Drupal Groups and Assigns Memberships Accordingly.
  - ◆ The Net Result Is That Group Memberships Are Not in the Database.
- Override Group::addMember and Group::removeMember Methods to Perform LDAP Operations Instead of DB Operations.
- Pull User Avatars From LDAP & Render With Drupal Image Styles `<tag1>`





# Oracle DB Driver

- Drupal Has a Decent Oracle Driver
- Oracle Can Be More Familiar, More Performant, and Better Supported In Large Organizations.
- This Client Had a Site-Wide License for Oracle so Cost-Difference Was Immaterial.
- 2 Week Development Effort to Be Up and Running On Oracle.
- We Contributed a Few Improvements to Oracle Project.
  - ◆ A few Unmerged Improvements Are Still on Github.



Thank You!

