TernBicycles.com
Empowering Business Teams to Control Their Technology With Drupal 9

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➔ Over 17 Years in Drupal Community
➔ VC Backed Startup Founder With Exit
➔ CTO at Top 50 Website
➔ Acquia VP DevRel, Marketing, Products
➔ Tag1 Sales, Partnerships, & Marketing
About Tag 1
The Team Global Leaders Trust to Ensure Their Success

The New York Times  THE LINUX FOUNDATION  ALJAZEERA
FORTIVE  tern  MICHIGAN
Capgemini  Symantec  Stanford University
FOREO  ACLU

tern

Confidential
Fortune 500
Terry Chen
Brand Director, Tern Bicycles

➔ Project Owner, Leads TernBicycles.com
➔ Leads Marketing & Creative Teams
➔ Led the Tern Team In Building the Most Successful Virtual Product Launch in Bike Industry History
➔ Product Marketing Manager For Ulead Systems
Tern Case Study: What We’ll Cover

- An Introduction to Tern Bicycles
- Why Did Tern First Choose Drupal?
- Drupal End of Life (EOL) and Extended Support
- Business Goals for The New Site
- Why Did Tern Upgrade to D9 & Stick with Drupal?
- A Preview of the New TernBicycles.com Site
- Innovative Solutions to Build and Deliver the Sites
- A Parallel Approach to a Challenging Data Migration
- Project & Dev Processes for Teams 12-15 Hours Apart
- Q&A
INTRODUCING
TERN BICYCLES
WHY DID TERN CHOOSE DRUPAL?
Why Did Tern First Choose Drupal?

Launched in 2011, Tern Needed a New Website Fast.

➔ Drupal's Flexibility Gave Confidence It’d Meet Short & Long Term Needs
➔ Drupal Has a Steeper Initial Learning Curve, But a Better ROI
➔ Don’t Need to Be a Developer to Run and Manage the Websites
➔ Standout Features: Content Types, Views, Domain Access & i18n
➔ Hardest Questions Was What Version of Drupal - D7 Was Coming Soon
After Launch, We Didn’t Need a Lot of Development Support. With Drupal’s Site-Building Capabilities, We Could Change & Manage Our 45+ Multilingual Websites, Rarely Modifying Code.

- Terry Chen, Brand Director
END OF LIFE (EOL)
EXTENDED SUPPORT
Drupal End of Life (EOL) - What Now?

Extended Support Enabled Tern to Run D6 Five Years Beyond EOL

➔ Tern Didn't Need to Upgrade - System Was Exceeding Expectations
➔ Upgrades Are High Cost, High Effort; Better ROI Elsewhere
➔ Initially Key Core Modules Were Not Mature Enough to Upgrade
➔ Make Business Decisions on Your Timeline, Don’t Be a Hostage of Tech
➔ Continue Running Drupal After EOL with Drupal Extended Support
We Were Excited to Learn About Tag1’s Extended Support Capabilities. We Loved the Fact That We Were Able to Extend the Life Of Our Drupal 6 Site Way Beyond EOL. We Definitely Got Our Money’s Worth, and Then Some!

- Terry Chen, Brand Director
D9 MIGRATION
BUSINESS GOALS
About TernBicycles.com

With Increased Interest in Cycling, Global Traffic Grew Exponentially

This Time Last Year TernBicycles.com Saw 130% Growth in Unique Users
### About TernBicycles.com

*User Traffic Is Highly Distributed Around the Globe*

<table>
<thead>
<tr>
<th>Country</th>
<th>Visits</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>208,041</td>
<td>14.07%</td>
</tr>
<tr>
<td>Japan</td>
<td>199,684</td>
<td>13.50%</td>
</tr>
<tr>
<td>Germany</td>
<td>177,047</td>
<td>11.97%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>97,141</td>
<td>6.57%</td>
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<tr>
<td>Singapore</td>
<td>94,554</td>
<td>6.40%</td>
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<tr>
<td>Philippines</td>
<td>77,542</td>
<td>5.24%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>59,531</td>
<td>4.03%</td>
</tr>
<tr>
<td>France</td>
<td>45,882</td>
<td>3.10%</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>43,351</td>
<td>2.93%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>39,822</td>
<td>2.69%</td>
</tr>
</tbody>
</table>
Business Goals for the New Site
Based On User & Distributor Feedback as Well as Tern’s Needs & Goals

➔ A Faster, Easier to Use Site That Provided Valuable, Relevant Info for Visitors
➔ Empower Distributors With Better Translation Tools & An Improved Backend
➔ New Features: Bike Comparison, Bike & Accessory Filters, Bike-Accessory Compatibility Checker, Etc
➔ Even Easier for Non-Technical Team Members to Add, Edit, Translate, Layout... Pages
➔ Do all this With Even Less Developer Support Than Before
➔ Implement the New Site Using Minimal Proprietary Code
➔ Collaborative Approach to Development
UPGRADING
WHY STICK WITH DRUPAL?
Why Did Tern Choose Drupal, Again?

When Migrating Platforms You Have to Consider All Options

➔ What Made Drupal Great For Tern Had Only Gotten Greater
➔ Site Building: Content Types, Views, Layout Builder, Etc.
➔ Multilingual: Much Improved Translation Workflow
➔ Conceptually Familiar to Tern and Distributors
➔ No More Migrations! The Path to D10 and Beyond Is Seamless
➔ Long-Term Relationship With a Great Agency Partner
La nuova GSD
Ancora piccola. Ancora più utile.
SCOPRI DI PIÙ
It’s Actually 45+ Multilingual Sites
...And This Is Where Things Get Complex

➔ Each Distributor Exclusively Owns One or More Countries
➔ They Control What Products They Offer and in What Configurations
➔ They Might Remove or Add Pages to Their Site
➔ Translation: Countries Can Have Content In Multiple Languages
➔ Efficiently Manage Content / Translations Across Multiple Sites

Meet the All-New GSD
Easily Add, Move, or Delete Content. **No Code Changes Required!**
Now You Can Control Style Too!

We Added **Components** to Drupal, Like in Laravel. They Can Be Anything. This Text is the **Tagline** Component.

- Hecha en aluminio tubular rígido que permite cargar paquetes altos y pesados
- Incluye una manija recubierta para cargar cómodamente cosas pesadas
- Anclaje con sistema KLICKix™ Rackpack compatible con portapequetes Tern Cargo™, Portago™, Freight™ y Loader™
- Robusto pie que le permite buena estabilidad en el piso
Site Builders Can Now Control Styles Including for Mobile Devices Through Configuration, Not Code

This Module Will Be Open Sourced Soon!
The Country-Language Selector is Also a Component.
Component Can Have Actions!
onClick The Menu Drops Down
Create or Modify Styles & Actions In Admin Pages

For Another Client We Are Prototyping The Ability to Create or Edit Styles, & Actions as Config not Code

Site Builders Have Complete Control!
Once Completed, This Code Will Get Open Sourced and Then Tern Can Download & Install It at No Cost!

Removed “uppercase” & Changed to “black” Font

Dynamic Preview of Changes
Expanding On Site Building With Components To Truly Achieve No-code Drupal

Peta Hoyes
Partner/COO

Fabian Franz
VP, Software Engineering

DrupalCon 2021
Thursday, April 15 - 17:20 to 17:50 UTC
Hopin - Room 2
#Tag1TeamTalks and Blogs
Learn More About the Latest Innovations in Drupal & Web Dev

Web Components
Tag1.com/Web-Components

Real-Time Collaboration
Tag1.com/Yjs

Performance & Scalability
Tag1.com/Goose
Bulk Copy/Paste Content, By Field, Across Languages.
Create One Spanish Translation, Copy to Other Countries, Then Refine Each

Filter and Select Content to Update

Then Select Synchronize
Are you sure you want to synchronize the translation for this entity?

The source language.
- Argentina - Español

Pick Source Language You Want to Copy From

Content - Page

Select fields to synchronize
- Body
- Metatags
- Published
- Title

Choose Fields to Sync

This action cannot be undone.

Confirm  Cancel
If you have a multilingual site that has multiple languages for different countries, you soon run into the issue where Columbian Spanish, Argentinian Spanish, and Mexican Spanish are identical.

Maintainers for Field translation synchronize

heddn - 2 commits  
last: 3 months ago, first: 4 months ago
Managing Tech Debt & D10 Upgrade Path

Preparing For a Future That Requires Minimal Development Support

➔ Took Minimal Effort to Test & Remove Deprecations & be D10 Ready
➔ Project Goal: Reduce Dependencies on Developers
➔ Drupal 10 Is Coming Soon, Really Soon! (June 2022)
➔ Tern’s Migration to D10 Should Be Quick & Easy With Minimal Dev
➔ Released 60~ Contrib Patches, Everyone Using D10 Benefits
➔ Only 6 Issues Remain That Can’t Be Addressed Until 10 Is Closer
The core/jquery.cookie asset library is deprecated in Drupal 9.0.0 and will be removed in Drupal 10.0.0. Use the core/js-cookie library instead.

Problem/Motivation
See https://www.drupal.org/node/3104677

Steps to reproduce
Proposed resolution

<table>
<thead>
<tr>
<th>Fixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project: EU Cookie Compliance (GDPR Compliance)</td>
</tr>
<tr>
<td>Version: 8.x-1.x-dev</td>
</tr>
<tr>
<td>Component Code</td>
</tr>
</tbody>
</table>
A CHALLENGING
DATA MIGRATION
Data Migrations Are One of the Most, Challenging, Time Consuming, and Expensive Aspects Of a Platform Migration Project!

- Anyone who’s done a migration
Data Migration Approach: Parallel Teams

Start Migration Work Early, in Parallel, Enable Degrees of Independence

- Dedicated Migration Team
- Dedicated QA Team

- Dev Phase 1
- Dev Phase 2
- Dev Phase 3

Month 1 | Month 2 | Month 3 | Month 4 | Post Launch
Data Migration Challenges

Exclusions: You Don’t Want to Migrate 100% of The Data Every Run

/**
 * Domains to exclude.
 */
const TERN_UPGRADE_EXCLUDED_DOMAINS = [
    'Austria', 'Brazil', 'Bulgarian', 'China', 'Ecuador', 'Estonia',
    'Guatemala', 'India', 'Indonesia', 'Israel', 'Latvia', 'Lithuania',
    'Panama', 'Peru', 'Puerto Rico', 'Romania', 'San Marino', 'Saudi Arabia',
    'United Arab Emirates',
];

/**
 * Countries to exclude.
 */
const TERN_UPGRADE_EXCLUDED_COUNTRIES = [
    'ae', 'at', 'br', 'bg', 'cn', 'ec', 'ee', 'gt', 'in', 'id', 'il', 'lv', 'lt',
    'pa', 'pt', 'ro', 'si', 'tr', 'xx', 'za',
];

Include or Exclude Specific Data Sets
Migrate Only What You Need, When You Need
Data Migration Approach: Parallel Process
Migrated From Multiple Sources to Get More Done, Easier, & Faster

- D6 Original Site
- CSV Bulk Import
- D9 Data Entry Site
- Migration System
- D9 Dev Site(s)
- D9 Demo Site

Exception Handling
Data Migration Challenges

What Appears Simple On the Surface May Be Deceptively Complex

→ 500k+ Record Sets, Lots of Content; 14+ Hrs to Process Each Full Run
→ 10+ Years of Data & Data Model Changes, Variability in Data
→ New Functionality & Data Models - 20% Of the Data Was Re-Mapped
→ Complex Permissions and Access Controls Must Be Maintained
→ i18n: D6 Every Node & Translated Node Has Nids -> d9 All Same NID
→ Data Validation: Revalidate All Dealer Addresses in the Database.
Data Migration Challenges: Data Formats

Complex Regex Need to Detect and Convert Content to New Models

Original D6 Spec Data Used Strings

‘Min: 490 mm (19.3”)’
‘Max: 590 mm (22”)’

Converted to Individual Fields In an Entity

field_seat_handle_low: 49
field_seat_handle_high: 59
DEVELOPMENT PROCESS
DISTRIBUTED GLOBAL TEAM
Global Team: From Taipei to Telluride

One of the Biggest Challenges Of the Project Was Time Zones

➔ 15hr Spread From Tern in Taipei to Furthest Team Member in Colorado
➔ Invest Heavily In Collaboration Tools: Github, Slack, Gdocs, Etc.
➔ Facilitate Asynchronous: Slack Standups, Every Meeting Recorded
➔ Anything Requiring a lot of Back & Forth Will Take a lot Longer, so Plan
➔ Working As One Dev Team With Tern Fully Engaged & Participating
➔ Ultimately Tern & Tag1’s Joint Dedication is What Made This a Success
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