

SAE Knowledge Hubs

Content Plan

*Recommendations for the rebooting of the SAE Knowledge Hubs in
2Q 2018*

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Abstract

This document describes a position on content creation for the SAE Knowledge Hubs, specifically with regard to the following questions: 1.) Third party content curation: How should this be handled? Linking vs. ingestion? How should taxonomy be applied? 2.) Journalism — how should it be included? 3.) Currency: what practices and resources are going to be required to preserve currency in the Knowledge Hubs? What do customer and users expect? 4.) Usage analytics: what resources, tools, and protocols do we need to get the right kind of analytics? 5.) Original writing: how should SAE leverage its own in-house journalism? What kinds of original content do we need to develop? What tone and style works best for customers and users?; and 6.) What features and functionality should the Knowledge Hubs include based on user input.

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Strategic Content Vision

My personal vision for the SAE Knowledge Hubs is for them to gain recognition in the automotive and aerospace mobility industry as a world-class, authoritative information resource for mobility engineers that save engineers time by putting great resources at their fingertips.

I envision the SAE Knowledge Hubs as a major complement to the SAE digital asset portfolio, on par with SAE.org and SAE MOBILUS.

The SAE Knowledge Hubs will constitute a thriving, dynamic community of like-minded engineering folks - a place that can bridge the gap between the young and the seasoned engineer - all with the purpose of driving MOBILUS sales and usage.

The Knowledge Hubs will be the preferred online destination where industry engineers of all backgrounds come to discover who is who and who is doing what and will be the first choice for engineers to share with other engineers what they are doing and why.

Tactical Content Plan - How We Will Get Started

This section describes the general short term approach that I will take to advance the vision of the Knowledge Hubs and to implement the overall content plan described in this document. These tactical initiatives will begin in earnest April 1 (the very start of 2Q 2018):

- Immediately halt postings on SAE Knowledge Hub test site (MobileGnosis.com) - This has already been completed. I will preserve Mobile Gnosis as a test site and possible solution for the front-facing platform of the SAE Knowledge Hubs.
- Initiate strategic partnership conversations with our business units - This is already underway.
 - **Marketing (Keith Rigby)** - Discuss with Keith Rigby the new way forward we have identified for the Knowledge Hubs.
 - **IT (Rich Elms)** - Work with Rich Elms to learn how IT can support our vision for the Knowledge Hubs platform.
 - **MOBILUS (Colleen Wolfe)** - Work in partnership with Colleen on the necessary linkage of the MOBILUS collection to an SAE Knowledge Hub.
 - **Legal (TBD)** - Ensure that our SAE Knowledge Hubs are fully compliant in regards to legal policies.

- Initiate strategic conversations with sales, aerospace and automotive directors
 - **Aerospace (Michael Thompson)** - Schedule a meeting with Michael to inform him of the new direction for the Knowledge Hubs.
 - **Automotive (John Tintinalli)** - Work with John on understanding the needs of the ground vehicle customers and how the Knowledge Hubs can help solve their problems.
 - **Sales (David Kurywchak)** - Work with David on a potential sales plan and other PLM frameworks and processes.
- **Resume daily postings on existing Knowledge Hubs (April 1)** - Now that the test site Mobile Gnosis has proven it's value, I will return to keeping the existing Knowledge Hubs updated while we refit them with enhanced technical capacity and an improved user experience.
- **Evaluate best CMS solutions for SAE Knowledge Hubs UX experience** - I will work closely with John McBride to identify the best solution that will meet the needs of the user. Our general solutions can be broken down as follows:
 - **HIPPO CMS** - I will work with marketing and IT on evaluating the HIPPO CMS currently used to power the .Org site, as a possible solution for the front-facing Hubs.
 - **Joomla CMS** - I will work with John McBride, Marketing and IT in the feasibility of using the Joomla CMS as a solution for the front-facing Knowledge Hubs.
 - Joomla is currently the CMS powering the SAE Knowledge Hub test site, MobileGnosis.com. The user experience presented on

this platform has been well regarded with customers and stakeholders.

- I will explore with marketing and IT possibly moving the Mobile Gnosis website (Joomla CMS) behind our corporate firewall and rebranding it as the SAE Knowledge Hubs.
- **Other solutions (Drupal, Wordpress, etc.)** - While our current most feasibility options appear to be HIPPO, because we are using it already, and Joomla, because we have it already running our test site, I will review other alternatives, which could also serve our vision for the Knowledge Hubs.
- Initiate conversations with key Knowledge Hub Stakeholders
 - **Advanced Manufacturing (Audra Ziegenfuss)** - I will talk to Audra about the new direction for the Hubs. I will also emphasize more of back and forth dynamic for keeping the Knowledge Hubs updated and establish a regular cadence of meetings
 - **Autonomous Vehicles (Jill Leonard)** - I will talk to Jill and maintain a regular cadence of interactions in regards to developing an AV Knowledge Hub.
 - **Powertrain, Accident Reconstruction (Robert Makowski)** - I will establish a regular cadence of interactions with Bob on the possibilities of breaking down the Powertrain Hub into potentially more useful focused Hubs (e.g., electric vehicles) or in eliminating the Knowledge Hub completely.
 - **Cybersecurity (Patti Kreh)** - I establish a regular cadence of interactions with Patti about content ideas for the cybersecurity Knowledge Hub.

- **Procurement and Support** - Work with Rachel Stefano and procurement to establish a purchase order for ongoing editorial and SAE Knowledge Hub web support
 - **MBO PWOs for part-time SAE editorial support** - We are already looking into this. What follows are folks that have done quality work around base line news curation or would be good fits for basic curatorial work.
 - **Sarah Mincin** - Curated News, Events, Training
 - **Carly Moore O'Connor** - Directory, Events, Training
 - **Mark Miller** - Curated News, Events, Training
 - **Requisition in Netsuite** - I will work with Rachael to get this set up so we can be fully compliant with procurement processes.
- **Industry Knowledge** - I will continue to attend events to network, demo and further my knowledge of SAE, its products and services. Currently, I am scheduled to attend the following events:
 - WCX - April 10 - 12 (Detroit, MI)
 - SLA - June 9 - June 13 (Baltimore, MD)
 - ASEE - June 24 - June 27 (Salt Lake City, UT)
- **Product Management training** - I will endeavor to increase my professional knowledge of Product Management best practices, skills and techniques.
 - **PM Courses** - I will contact Colleen Wolfe about PM classes and her thoughts on courses in which she has participated.

- **Continuing PM education** - I will identify courses, events and training to help me execute on the Knowledge Hubs from a product management standpoint.
- **Continuing content marketing education** - I will also seek to enhance my knowledge of content marketing in general through relevant training, events and courses.

Research and Historical Overview

In 2016 the Knowledge Hubs were conceptualized as a web resource serving as a single point of access to bring information together from diverse sources and in a uniform way.

The spring of 2017 saw the launch of the first Hub centered on Cybersecurity. The minimum viable product (MVP) of the Cybersecurity Knowledge Hub contained news, publications, events, training and the beginnings of a company/personal directory.

Extensive Customer interviews with fourteen (14) participants at WCX that year revealed that each participant expressed a need for at least one aspect of the Hub's MVP offering and all were interested in being kept up to date as the launch of the hubs approached.

Customer conversations continued to validate that the problem solved by the Knowledge Hubs was providing easy access to trusted, relevant, unbiased, neutral information resources in the convenience of one digital platform. This value proposition stood to save an engineer a great deal of time in filtering and searching for information.

In August 2017 I was hired as the web portal specialist. At the time, the Knowledge Hubs were still getting underway. The Cybersecurity and Advanced Manufacturing Hubs were online and the Powertrain Hub was soon to launch. It was at this time I began to meet customers and learn more about the Knowledge Hubs value proposition.

Throughout the Fall of 2017, I attended a series of SAE events including Comvec 17, Aerotech 17, IQPC Cybersecurity Event in Silicon Valley, and participated in a

customer trip to the University of Dayton where I meet engineering librarian Jack O’Gorman.

At the IQPC event, I met several personnel from Karamba Security and Bob Gourley, a cybersecurity expert and sponsored SAE speaker. Shortly after that event, I wrote a blog article about Bob’s cybersecurity strategy, which was well received online and by Bob Gourley himself.

At Comvec 17, I helped facilitate user focus groups to help identify the chief challenges facing today’s mobility engineering professionals and also conducted Knowledge Hub interviews at the SAE MOBILUS and SAE Knowledge Hubs demonstration floor exhibit.

I participated in more focus groups at Aerotech 17. I wrote another blog article, this one recommending that Blockchain technology be used to solve some of the industry concerns around data usage. This article fared very well on social media channels.

Revalidating the SAE Knowledge Hub Value Proposition

As 2017 came to a close, myself, John McBride and Colleen Wolfe were tasked, as part of a greater strategic objective for global product management in Q1 2018, to revalidate and investigate the “true value” of the SAE Knowledge Hubs and to make a formal recommendation for their way forward.

In early 2018, John and I traveled again to Silicon Valley with Mike Ferketic and met with a several customers including Apple, Movimento, Motiv Power Systems, SF Motors, and Byton. We showed these customers the existing Knowledge Hubs and our prototype website, MobileGnosis.com. It was during these interviews that

that our customers revealed a preference for the user experience present on the Mobile Gnosis website.

Note: The details of these interviews - some of which are captured with virtual reality - are available through the UX recommendations of John McBride and are further referred in a Knowledge Hub 2.0 Proposal, which were a result of these user interviews. Those recommendations were submitted by our team to CPO Frank Menchaca to satisfy the Q1 2018 strategic objective referred to earlier in this document.

On the first night of this trip, John and I met with several engineers at an SEA sponsored meet up about Flying Cars, which was hosted by FKA Silicon Valley. The featured speaker was Ralph Panhuyzen, a dutch engineer and pioneer of flying car technology.



Ralph Panhuyzen, a dutch engineer and pioneer of flying car technology delivers a presentation on adoption of flying car technology.

We spoke with many engineers at this event and throughout the week who confirmed the value that the SAE Knowledge Hubs were poised to deliver - trusted, authoritative and unbiased information and in one easy place to get it. It was noted there was a need expressed for folks to come together around these various technology topics and that the Knowledge Hubs would be a valuable solution if they could do just that.

In early 2018, John McBride and I traveled to Detroit where we meet internal stakeholders from the SAE Detroit Section, participated in a Meet Up social event comprised largely of young engineers, and also meet with internal stakeholder Jack Pokrzywa, ground vehicles standards director.

Jack in particular expressed “intrigue” at the thought of committees having an informational presence on the Mobile Gnosis prototype website. The community aspects of it were ideal to help attract younger engineers, Jack stated.

The value of the community aspects of the prototype website were again confirmed with subsequent interviews with Judith Ritchie (senior aerospace adviser), David Alexander (aerospace standards director) and Rebecca Lemon (technical project specialist). Each of them expressed great enthusiasm for adding a community aspect to the concept of the Knowledge Hubs as a way to bring people together.

Subsequent interviews involved phone calls with Mike Ferketic and internal interviews with aerospace and automotive committee stakeholders.

During all of these experiences, I spoke directly with a variety of personas including staff engineers, sales folks, engineering sales managers, product managers, homologation experts, executives, OEMs, suppliers, students and an engineering librarian, and numerous internal SAE stakeholders.

Each of them in turn confirmed and re-validated that the initial content offerings planned for the MVP Hubs (news, events, training, etc.) were still viable, valuable and needed in the mobility engineering marketplace. Users clamored for a digital solution that could serve as a centralized location for domain centric news, blogs, videos, podcasts, events, technical publications, directory listings, training courses and community forums.

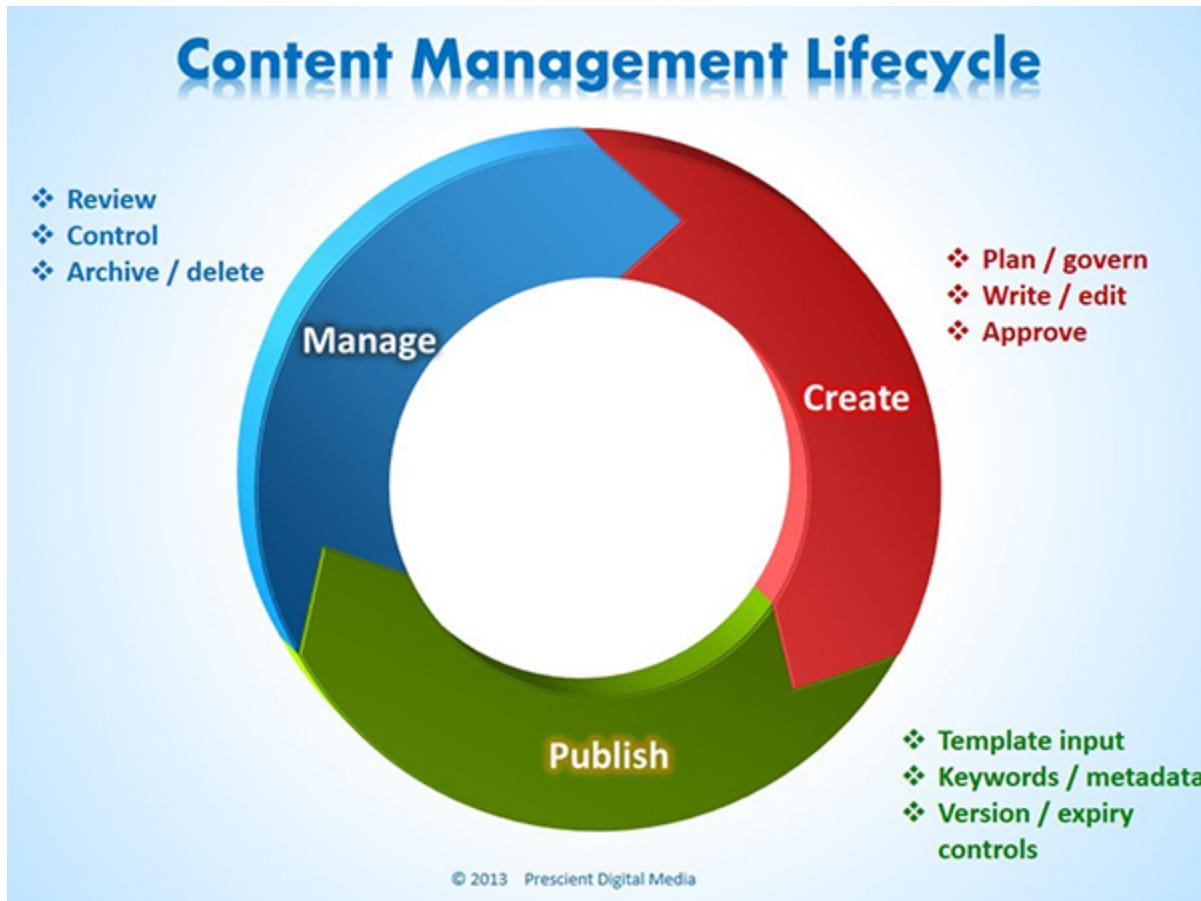
Our team concluded that an enterprise grade, world-class information product that offers all the features and user experience, which our internal and external customers and stakeholders were seeking, did not exist.

Therefore, we see great opportunity in providing the solution our customers want by enhancing the user experience and technical capacity of the SAE Knowledge Hubs. We believe that by refitting the original SAE Knowledge Hub concept with improved technical capacity and support for more community-oriented interaction, the SAE Knowledge Hubs will drive sales and usage of the SAE MOBILUS technical resource platform, through the acquisition of new customers and by keeping current customers engaged with relevant news, information, events and training. The content plan described in this document proposes to deliver this solution to the marketplace.

The Content Management Lifecycle (CLM)

At the heart of any content plan is a framework to deliver and manage it. This is achieved largely by the implementation of a content management lifecycle (CLM) that is fully supported by the CMS solution that will be used to power our vision of the Knowledge Hubs.

The following image shows the general workflow of a typical content management lifecycle:



Content Management Lifecycle (CLM)

Content is assembled and delivered to users using a variety of publishing mechanisms and channels. Content can be personalized to meet the needs of the individual user, and localized to reflect the regional, national, or cultural norms and brand values. The content management lifecycle provides a framework for managing and thinking about content from its inception to its ultimate sunset. There are many different models for a content management lifecycle, but they generally can be said to have the following main components that feed into each other: creation, publishing, and measurement.

Content Creation

The creation of content typically involves the following:

- **Analysis** - examine the business goals, business processes and requirements, and analyze the content and the content lifecycle.
- **Quantification** - define measurable indicators to decide in the evaluation phase if the content management strategy is successful.
- **Alignment** -- match the content management strategy with your business goals and objectives.
- **Design** - develop your information architecture (content model, metadata, standards, workflow, interaction design, etc.) and install a governance policy.
- **Assembly** - aggregate content into logical structures like documents and web pages beforehand or on demand.

Content Publishing

Publishing content typically includes the following:

- **Syndication** - make content available to multiple subscribers simultaneously through rss, social networks, web services, etc.
- **Personalization** - tailor content to meet the specific needs of individual users.
- **Localization** - adapt content to make it appropriate for content consumers who speak a specific language or reside in a specific country or region.
- **Publishing** - render or output content from a content management system into the desired delivery format.

Content Analysis

Analyzing the effectiveness of content, typically involves the following:

- **Archiving** - store legacy content securely outside of the content management system to address issues of accountability and make content available for future use.
- **Backing up** -- copy or save content to another location in order to recover it in the event of system failure, human error or catastrophic loss.
- **Migrating** - migrate content from other systems or repositories to your content management environment or migrate your content to another system or format.
- **Destroying** - content that is no longer valuable for organizational, legible or historical reasons, can -- and sometimes must -- be destroyed. Make sure you can prove that these content items are actually destroyed.
- **Auditing** - perform a systematic examination of your content management processes, technology performance, end-user satisfaction and customer satisfaction.
- **Measuring** - Quantify and compare the audit results against the defined indicators to determine if the project was successful and to identify areas for future improvement.
- **Researching** - investigate new technologies, tools, design and methodologies to identify next steps for your content management project.
- **Adapting** - adjust your strategy to address the results of your evaluation. Use this information to alter your plans for the next phase of your content management process. Return to CLM.

An Overview of Content Types

For purposes of this content plan it is important to define content types to ensure a shared understanding across SAE's various business units. Content at SAE is used and understood by various SAE business units in different manners. From the standpoint of the SAE Knowledge Hubs, I believe two primary content types emerge:

- **Ingested Content** - Content that is made available through the SAE MOBILUS technical resource platform and typically requires a subscription to obtain access to it. This is more often paid content, though there are ingested pieces of content that are available for free.
- **Non-ingested content** - Content that is consumed on a front-facing Knowledge Hub either by freely viewing the content as a public user or by potentially logging into a Knowledge Hub and accessing content available only to group members. Non-ingested content is typically free content, but it should be noted that monetization possibilities exist for content that is non-ingested into the MOBILUS platform and made available on front facing, publicly accessible Knowledge Hub.

Recommended Non-Ingested Content

Based upon my interviews and experiences to date, it is my strong recommendation to support the following non-ingested content types:

- User Generated Content (UGC)
- Curated News
- Communities (Groups)
- Organizational and Professional Directory
- Curated Events
- Curated Training
- Videos, Podcasts, and other Multimedia

The proceeding sections provide a general overview of these refined content types.

SAE MOBILUS HOME SEARCH DASHBOARD KNOWLEDGE HUBS BROWSE HELP

Enter keyword, authors, product code... in: Metadata + Full Text **SEARCH** Advanced Search

Cybersecurity Knowledge Hub About | Communication Sign-up | Cybersecurity Home

 PUBLICATIONS  TRAINING  EVENTS  DIRECTORY  NEWS

Cybersecurity Training

Access the SAE International portfolio of timely, relevant, and high quality cybersecurity-related training. Developed in collaboration with the thought-leaders in information security.

Some training courses are not affiliated with SAE. You should conduct your own investigation into their offerings, as SAE makes no representations regarding their suitability for any particular business need.

GET A FREE CYBERSECURITY TRIAL

+ KEYS TO CREATING A CYBERSECURITY PROCESS FROM THE J3061 PROCESS FRAMEWORK SAE International | 7 hr Web Seminar 

June 18-22, 2018 | Live, Online

Connected vehicles are increasingly seen as a target for cybersecurity attacks. A key differentiator for the automotive industry is the use of cyber-physical systems, where a successful cybersecurity attack can affect physical entities. Often involving embedded electronics and real time control, these systems require different solutions in addition to established IT security principles and reactive responses to threats. Cybersecurity needs to be designed and built into cyber-physical systems throughout the development lifecycle to provide defense in depth. SAE J3061 provides an engineering process to design and build cybersecurity into vehicle systems in a comprehensive and systematic way, to monitor for and respond to incidents in the field, and to address vulnerabilities in service and operation. J3061 is unique in describing a process framework for cybersecurity that an organization can tailor against its other development processes. This allows an organization to develop an internal cybersecurity process consistent with its other processes in order to build cybersecurity robustness into their cyber-physical systems.

+ PERFORMING A CYBERSECURITY THREAT ANALYSIS AND RISK ASSESSMENT SAE International | 6 hr Web Seminar 

TBD | Live, Online

SAE J3061 sets out a recommended cybersecurity engineering process framework for organizations developing cyber physical systems. One of the recommendations of this framework is to carry out a threat analysis and risk assessment early in the product development. A threat analysis identifies and models the relevant threats against assets, and a risk assessment classifies the impact and likelihood associated with each threat. The approach enables the prioritization of risks and appropriate risk treatment measures to be determined in subsequent

Example of non-ingested “training” content on the existing SAE Knowledge Hubs.

User Generated Content (UGC)

This content plan proposes that the missing piece of the SAE Knowledge Hubs (and the SAE digital asset portfolio in general) is the need to support User Generated Content (UGC).

UGC is critical to supporting and scaling a world class information resource and to effectively meet the demands of the market which were revealed in repeated user interviews from the initial launching of the SAE Knowledge Hubs until present.

To support UGC, it is required that the SAE Knowledge Hubs offer the technical capacity to enable users to contribute content and easily share that content.

The submission of UGC also mandates an editorial process and publishing workflow (aforementioned CLM), various SAE Knowledge Hub user roles, which must be supported by the CMS of choice that will power the SAE Knowledge Hubs.

The next section provides details of the content creator roles that would be required to support a UCG content implementation on the Knowledge Hubs.

Content Creation Roles

UGC requires a CMS solution that can support publishing workflow.

- Public
- Registered
- Subscribers
- Special (Moderators, Editors, Admins)

What follows is more detailed description of those user types.

Public

Public viewers are users actively viewing and sharing content on the SAE Knowledge Hubs. They can be anyone, anywhere in the world, that can access the SAE Knowledge Hubs online via a desktop, tablet, smartphone or other connected device. Public users do not have the ability to contribute content.

Registered

Registered members of the SAE Knowledge Hubs can contribute profile information that describes their background, expertise, basic demographic data, and preferred contact information.

Registration is envisioned to be free, but registered members must agree to a “terms and conditions” for use of the websites collaborative features.

Registered members are enabled to contribute UGC. Moreover, they can do the following:

- Submit an article
- Create a business, event or training listing
- Participate in a forum
- Request to join a special group and network with others using the SAE Knowledge Hubs community group features
- Sign up for newsletter

Subscriber

A subscriber is a user who has a paid subscription to access a specific SAE Knowledge Hub (e.g., Cybersecurity, Advanced Manufacturing, Powertrain) and

therefore has access to that Knowledge Hub's technical content collection, which is delivered by the MOBILUS technical resource platform. These are the revenue generating customers for SAE.

Special (Moderators, Admins, Editors)

The special user designation describes the registered users of the site that have been granted permission to moderate UGC. Special users can be designated but not limited to the following types of roles:

- **Authors** - Generally registered users who contribute content for moderation and review
- **Editors** - User that edit other user contributed content
- **Managers** - Responsible for group management, Hub management. This can include approving registered members for inclusion in a private group.
- **Moderators** - Users given permission to moderate user contributed content notably in forums or directory comments and reviews. Moderators ensure that user contributed content adheres to the standards, terms and conditions, etc.
- **Publishers** - Generally those designated with all privileges except for site admin access.
- **Administrators** - Can perform maintenance tasks on certain parts of the SAE Knowledge Hubs and can remove or approve users.
- **Super Admin** - Can effectively modify site technology, make upgrades, add new features and functionality, remove and approve users.

Curated News

It is recommended in this content plan that curated news constitute an integral part of the SAE Knowledge Hub content mix.

"Web content will surround us (I think it might even drown us). There will be more content than ever on the web, since the Internet is only growing: so what do we do with this content? How do we find our own great ideas, make our own stamp, and come out with content that matters?"

"One word, with many ideas to come from it: curation."

—Julia McCoy, SEJ: Search Engine Journal

- **Knowledge Hubs prototype research** - The Knowledge Hubs prototype website MobileGnosis.com used Google Analytics to monitor the implementation of a basic content curation strategy.

From Nov. 1, 2017 to Jan. 31, 2018, the number of pageviews on the test site increased from approximately 10,000 views during November 2017 to approximately 20,000 in January 2018. The results demonstrated that steady and consistent news curation is an effective tactic for building an audience.

Hi, Scratch [Log out](#) [Community](#)

MOBILE GNOSIS

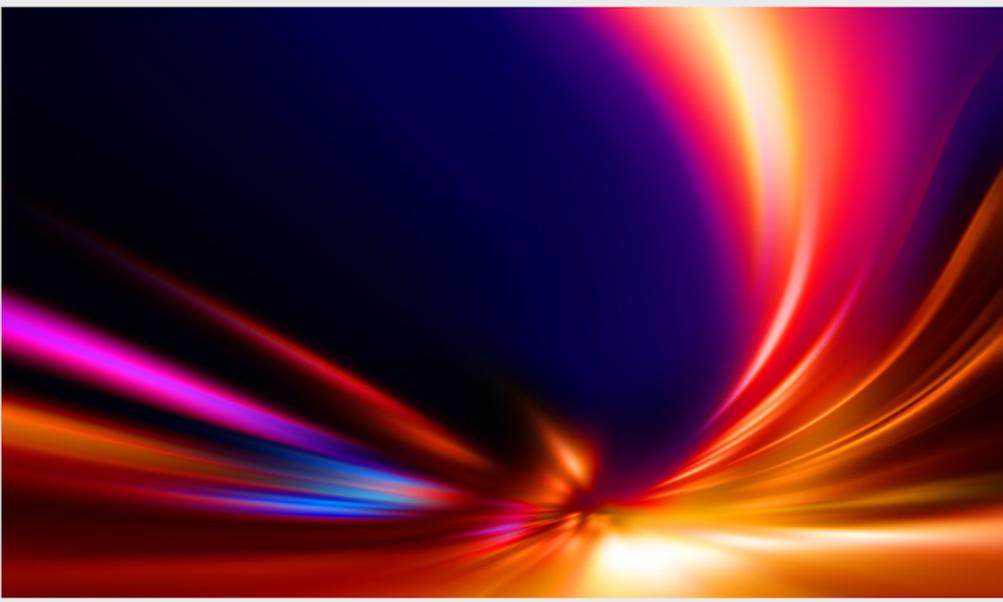
Discover Explore Attend Train Discuss Search

You are here: Home ▶ Advanced Manufacturing ▶ Lockhead Martin to aid in greek fighter jet upgrades

Lockhead Martin to aid in greek fighter jet upgrades

Written by Sara Mincin Mobility Hub: Advanced Manufacturing Published: 19 March 2018 Hits: 36

Aerospace Trump fighter jets Greece 85 F-16 fighter jet Lockheed Martin F-35



The Greek City Times reports that Greek authorities, US government officials, and key players from Lockhead Martin met to discuss serious upgrades to Greece's fighter jet fleets.

Greece plans to pay America over \$1 billion for desired upgrades to their 85 F-16 fighter jets in order to be prepared to go against the F-35s that Turkey is acquiring.

The meeting was held a few weeks ago and Greece is expecting its plans to be upgraded to "viper" status to be a formidable force against what Turkey may have in store.

Example of curated news article on SAE Knowledge Hub prototype website MobileGnosis.com.

Directory

It is recommended by this content plan that the SAE Knowledge Hubs feature a world class directory of engineering organizations and professionals.

User research supports a market need to provide a complete view of rapidly evolving and emerging segments of the mobility engineering and that this need is currently unmet in the marketplace. By deploying and supporting a scalable, user-supported directory, SAE is enabled to do the following:

1. Improve visibility in emergent technologies
2. Get discovered more
3. Leverage word of mouth social dynamics
4. Strengthen it's business reputation
5. Increase brand awareness
6. Boost SEO

It was noted by several engineers at the Silicon Valley meetup that such a directory in Silicon Valley would be deemed highly valuable. It was acknowledged that it would be an ambitious undertaking but that the value for the user would be enormous. It was further noted by several engineers at the Flying Car Meet Up that networking throughout Silicon Valley was largely a word-of-mouth task and a directory could be of a huge value.

To support this vision, a modern directory tool that is easy to maintain, supports UGC, is responsive, and allows for high customization of listing types to address various entities - from organizations and professionals to school programs and government entities - is required.

The SAE Knowledge Hubs prototype site used JReviews a component designed to provide professional directory solution for Joomla based CMS websites. It is my judgement that this directory tool meets the criteria required to support the vision for a world class directory component.

Hi, Scratch [Log out](#) [Community](#)

MOBILE GNOSIS

Discover Explore Attend Train Discuss Search

Mobility Engineering Knowledge Directory



The Mobile Gnosis Directory contains listings of global resources for aerospace and automotive mobility engineers.

0-9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Search Advanced search

Directory

Organizations (44) Professionals (1)

Filter by Industry

Aerospace (21) Automotive (28) Commercial Vehicle (29)

The JReviews Directory component allows for custom entity types and associating entity types with one another.

44 results - showing 1 - 10

1 2 3 4 5

NASA
National Aeronautics and Space Administration (NASA)
5.0 (1)

BAE SYSTEMS
BAE Systems PLC
0.0 (0)

Mitsubishi Heavy Industries, Ltd.
0.0 (0)

BOMBARDIER
Bombardier Aerospace
0.0 (0)

L3 Technologies
L-3 Technologies
0.0 (0)

ROLLS ROYCE
Rolls-Royce Holdings
0.0 (0)

SAFRAN
Safran S.A.
0.0 (0)

TEXTRON
Textron
0.0 (0)

GENERAL DYNAMICS
General Dynamics
0.0 (0)

Honeywell
Honeywell Aerospace
0.0 (0)

Filter by Industry

Aerospace (20)	Automotive (27)	Commercial Vehicle (28)
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Filter by Mobility Hub

Academics (1)	Accident Recon (1)	Advanced Manufacturing (14)
Autonomous Vehicles (12)	Big Data (3)	Connected Aircraft (21)
Cybersecurity (17)	Government Regulations (4)	Powertrain (21)
Space (10)	Standards (1)	

Image of responsive organizations index page.

Communities

User interviews conducted with both internal and external stakeholders strongly support the need for the SAE Knowledge Hubs to offer community functionality.

Conversations enliven communities, and forums can be great places to facilitate conversations among community members. Forums are fantastic tools for encouraging discussions around a central theme.

Communities can help members form relationships, motivate one other to achieve goals, and learn new skills. It is therefore recommended that the SAE Knowledge Hubs offer this community support.

Hi, Scratch [Log out](#) [Community](#)

MOBILE GNOSIS

[Discover](#) [Explore](#) [Attend](#) [Train](#) [Discuss](#) [Search](#)

[Index](#) [Recent Topics](#) [New Topic](#) [No Replies](#) [My Topics](#) [Profile](#) [Help](#) [Search](#)

Welcome, **Scratch**
 Last login: 2 hours 29 minutes ago
[Logout](#)

[Private Messages](#)
[Preferences](#)
[Announcements](#)

Forum > [Recent Topics](#)

8 Topics Page: **1**

Recent Topics

0 Replies	Hello and welcome to the Connected Air Hub on Mobile Gnosis Category: Connected Aircraft Hangar Topic started 1 month 25 minutes ago, by Scratch	39 Views	Last Post by Scratch 1 month 25 minutes ago	<input type="checkbox"/>
- Choose Action - - Choose Destination - Go				

Page: **1**

Members

Total users online: 1 Member and 31 Guests Online
 **Scratch**
Legend: Site Administrator Global Moderator Moderator Banned User Guest

Statistics

Total Messages: 8 | Total Subjects: 8 Total Users: 11 | Latest Member: **Jack9792**
Total Sections: 13 | Total Categories: 24 Statistics »
Today Open: 0 | Yesterday Open: 0
Today Total Answer: 0 | Yesterday Total Answer: 0

Forum > [Recent Topics](#)

Time to create page: 0.191 seconds
Powered by Kunena Forum

[Community](#) [Write an article](#) [Create a directory, training or event listing](#) [Start a conversation](#)

Image of the community functionality on the SAE Knowledge Hubs prototype website, MobileGnosis.com.

Events

It is recommended by this content plan that curated SAE and non-SAE industry events be available on the Knowledge Hubs. Registered Hub Users should be able to add, review and post comments for moderation.

MOBILE GNOSIS

[Discover](#) ▾[Explore](#)[Attend](#)[Train](#)[Discuss](#)[Search](#)[Events](#) ▶ [Conferences](#) ▶ WCX World Congress Experience

WCX World Congress Experience



145 1 1 0

[Compare](#) [Add Media](#) [Write Review](#) [Send Inquiry](#) [Add to favorites](#)

LOCATION

Address COBO Center, Detroit, Michigan

EVENT INFO

Start Date April 10, 2018
End Date April 12, 2018
Organizer SAE International

CONTACT INFO

Website <http://wcx18.org/>

MOBILITY HUBS

Mobility Hubs Accident Recon • Autonomous Vehicles • Big Data • Cybersecurity • Powertrain

INDUSTRY

Industry Automotive • Commercial Vehicle

At WCX World Congress Experience practical meets potential. The premier talent in the automotive and mobility industry converge to address current challenges, discover new avenues of exploration, and explore the promise of the future of transportation engineering in an interactive experience.

Revolutionary changes are driving the mobility industry forward, and WCX is at the forefront of the revolution. Explore the next generation of transportation engineering over three days of interactive learning, expert insight and technological innovation.

“

Through an inspiring combination of personalized learning experiences, unique show features for all industry specialties and a captivating exhibition hall showcasing cutting-edge technology and thought-leading innovation, WCX is the launch pad for future mobility.



Who Attends?

Training

It is recommended that curated SAE and non-SAE industry training be available on the Knowledge Hubs.

Registered Hub Users should be able to add events, review and post comments for moderation. It is recommended that training items can “tagged” for multiple Hub categories.

The screenshot shows the 'Training' section of the SAE Knowledge Hubs prototype website. At the top, there's a navigation bar with 'Hi, Scratch' and 'Log out' buttons, and a 'Community' icon. Below the header, the 'MOBILE GNOSIS' logo is displayed, followed by a dark blue navigation bar with 'Discover', 'Explore', 'Attend', 'Train', 'Discuss', and 'Search' buttons. A search bar with a placeholder 'Search' and a dropdown menu showing letters from A to Z are also present. The main content area is titled 'Training' and includes sections for 'Certification Programs (0)', 'Web Seminars (3)', 'Classroom Training (8)', and 'On-Demand Training (3)'. Below this, a 'Filter by Industry' section lists categories like Aerospace (5), Automotive (9), Commercial Vehicle (9), Organization (3), Accident Recon (2), Cybersecurity (3), Standards (1), Autonomous Vehicles (4), Powertrain (6), Connected Aircraft (5), and Space (2). At the bottom, there's a footer with links for 'Community', 'Write an article', 'Create a directory, training or event listing', and 'Start a conversation'.

Events page on the SAE Knowledge Hubs prototype website MobileGnosis.com

Blogs

"The best way to stay on top? Set yourself as a thought leader. The most effective way to become one in this digital age? Blog."

—Rhiza Oyos, Spiralytics.com

The importance of blogging to build thought leadership is well established across many industries. Blogging does the following:

- Blogging helps you lay the foundation as an expert in your field.
- Blogging helps you stay consistent with your forward thinking.
- Blogging allows you to build customer relationships.

It is recommended that to support thought leadership and community around emergent technologies, SAE Knowledge Hubs should have several unique voices to further along and build SAE's reputation.

Blog articles can be nurtured from SMEs at SAE and externally too. Industry experts who have participated at an SAE Event, etc. Blog articles are typically more laid back, entertainment-oriented.

The following image displays a blog style article published on the SAE Knowledge Hubs prototype website, MobileGnosis.com.

Is your cybersecurity strategy – a house that fear built?

Mobility Hub: Blog



The Winchester Mystery House, San Jose, California. Photo from Wikipedia.

By Matt De Reno

Built in 1882, the the Winchester Mystery House in San Jose, California, is a famous Queen Anne-style Victorian mansion, renowned for its size, bizarre architectural features, and its notable lack of a master building plan.

It is reportedly haunted by the ghost of Sarah Winchester and all the spirits of those killed by Winchester rifles, for which her husband amassed a fortune.

A colleague and I toured this historical landmark after a day of absorbing horror stories of a different nature at the 6th IQPC Annual Cybersecurity Summit, a gathering of cybersecurity industry occult, that took place in Fremont, California, in a realm called Silicon Valley.

But back to that spooky Winchester house for a dreaded moment.

It includes stairs to nowhere, windows in odd places and a host of other oddities. There are roughly 161 rooms, including 40 bedrooms, 2 ballrooms (one completed and one unfinished) as well as 47 fireplaces, over 10,000 panes of glass, 17 chimneys (with evidence of two others), two basements and three elevators. Sarah, it was believed, needed to placate the spirits and was guided by fear of them. So until the day she dropped dead, she kept building rooms to address her fears and the ghosts that haunted her.

“

To me, the Winchester Mystery House serves as both a cautionary tale for Agile development gone bad (okay, I couldn't help myself) and to a much greater extent, as a metaphor for how companies today are engineering their cybersecurity strategies: no master plan and fear is the guiding principle.

Luckily, in attendance at our conference, was a cybersecurity expert – a Dr. Van Helsing of the cyber world if you will – who delivered an engaging presentation that took the fear out of the process of dealing with cybersecurity threats.

Note: Blog articles are more relaxed in tone and build thought leadership.

Ingested Content: Description

As described earlier, and for purposes of this content plan, ingested content is anything that is ingested directly into and made available by the SAE MOBILUS platform. This can include the following content types:

- Standards
- Technical papers
- Magazine Articles, Feature Articles
- Books, Journals, etc.

The screenshot shows the SAE MOBILUS website's Cybersecurity Knowledge Hub. The top navigation bar includes links for SELECT LANGUAGE, HELP, LOGIN, and various categories like Publications, Training, Events, Directory, and News. The main content area is titled "Cybersecurity Publications". It displays a list of search results for "Cybersecurity", with 1-10 of about 338 results shown. The results include:

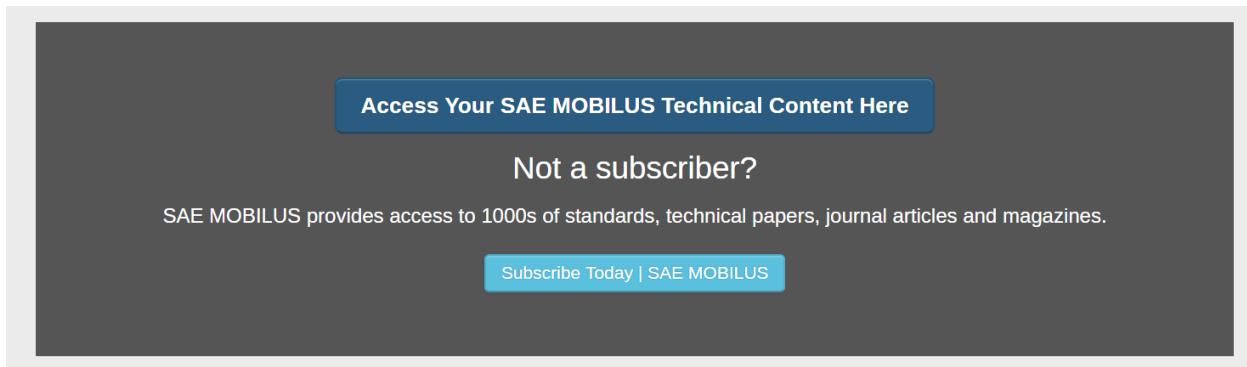
- Event Data Recorder - Retrieval Tool Protocol** (Ground Vehicle Standard J1692/2, 201803)
- Remote Detection of Electronic Devices** (Magazine Article TBMG-28559)
- J1939 Digital Annex** (Ground Vehicle Standard J1939DA, 201802)
- Security for Plug-In Electric Vehicle Communications** (Ground Vehicle Standard J2931/7, 201802)
- Power Analysis and Fault Attacks against Secure CAN: How Safe Are Your Keys?** (Journal Article 11-01-01-0001)

The left sidebar contains a "Your Selections" section with filters for "Cybersecurity", "Minimize Filter", "APPLY", "RESET", and "SAVE". It also includes sections for "SHOW ONLY" (Newly Added Content, Full Text Content), "FILTERS" (Collections: KNOWLEDGE HUB COLLECTIONS, Cybersecurity), "Content Types" (Ground Vehicle Standard, Technical Paper, Magazine Article, Journal Article, Magazine Feature Article, Magazine Issue, Book, Aerospace Standard, Progress in Technology), "Dates", and "Sectors".

Example of ingested content in SAE MOBILUS.

Call To Action: Access Your SAE MOBILUS Technical Content Here

This content plan recommends that the primary Call To Action (CTA) on every SAE Knowledge HUB page provide a quick and easy link to directly go from that page and into the MOBILUS platform. The purpose of this linkage is to drive usage and sales.



Call To Action (CTA) Block

The motivation for providing a CTA on every non-ingested content URL generated on the SAE Knowledge Hubs is to make it extremely convenient for a user to go from consumer of free content to a consumer of paid content.

If a Knowledge Hub visitor is an existing subscriber, the first link button “Access Your SAE MOBILUS Technical Content Here” will provide convenience for them to access MOBILUS. If this visitor is a potentially new customer, the “Subscribe Today | SAE MOBILUS” link button will help guide them along to becoming a paid, revenue generating subscriber.

This journey can and should be tracked using analytics. When a new piece of non-ingested content is added to the Hubs (events, training, news, blog, etc.) a

new SEO friendly URL is generated to a new web page that provides this CTA and the opportunities to drive users to MOBILUS multiplies.

Metrics & Analysis

Consumption metrics refers to the measurement of content that visitors see and consume when visiting The Knowledge Hubs. The measurement of content is important and an indicator of the content on the Knowledge Hubs are being viewed and interacted with. Examples of metrics to be tracked include:

1. Page Views: Page view metrics track how many people have seen the pages and content
2. Video Views: Video view metrics track how many people have seen your videos.
3. Document Views: Document view metrics track the number of views for any documents embedded on your site.
4. Downloads: Download metrics track the number of times people download downloadable content.

Sharing Metrics

Sharing metrics measure how many people are sharing the content from the Knowledge Hubs with friends and across the internet. Content sharing can be an indicator of content usefulness and popularity, and can thus indicate the value of the Knowledge Hubs. Sharing metrics include: Sharing content via social share buttons on the Knowledge Hubs.

1. A backlink is created whenever another website links to the Knowledge Hubs.
2. Email open rate and forwards.

3. Additional sharing metrics associated with SAE MOBILUS collaborative functionality

Lead Generation Metrics

Lead generation to SAE MOBILUS by the Knowledge Hubs is critical. Relevant, unbiased content will help move website visitors through the sales funnel from passive viewers to active and loyal followers. Metrics we should be paying attention to include the following:

1. Conversion rates: The number of unique site visitors measured against the number of conversions.
2. Form completions and call-to-action downloads: The number of times a visitor signs up for your newsletter, downloads a special report, etc.
3. Subscribers:
4. Number of Visitors to the site
5. How visitors are getting to the Knowledge Hubs whether it be form social media or organic search
6. Bounce Rate is defined as the number of pages going to only one page of the Knowledge Hubs and then exit. The bounce rate will help determine the “stickiness” of the Knowledge Hubs.
7. Average time on the Knowledge Hubs will indicate if the content is engaging and if visitors are exploring.
8. Click through Rate on the Knowledge Hubs will help to determine the willingness for visitors to take the next step to becoming subscribers to SAE MOBILUS.
9. Conversion Rates for established goals.
10. SAE MOBILUS subscriptions
11. SAE Upsells
12. New registered members
13. New Knowledge Hub

14. SAE MOBILUS Subscription Metrics:

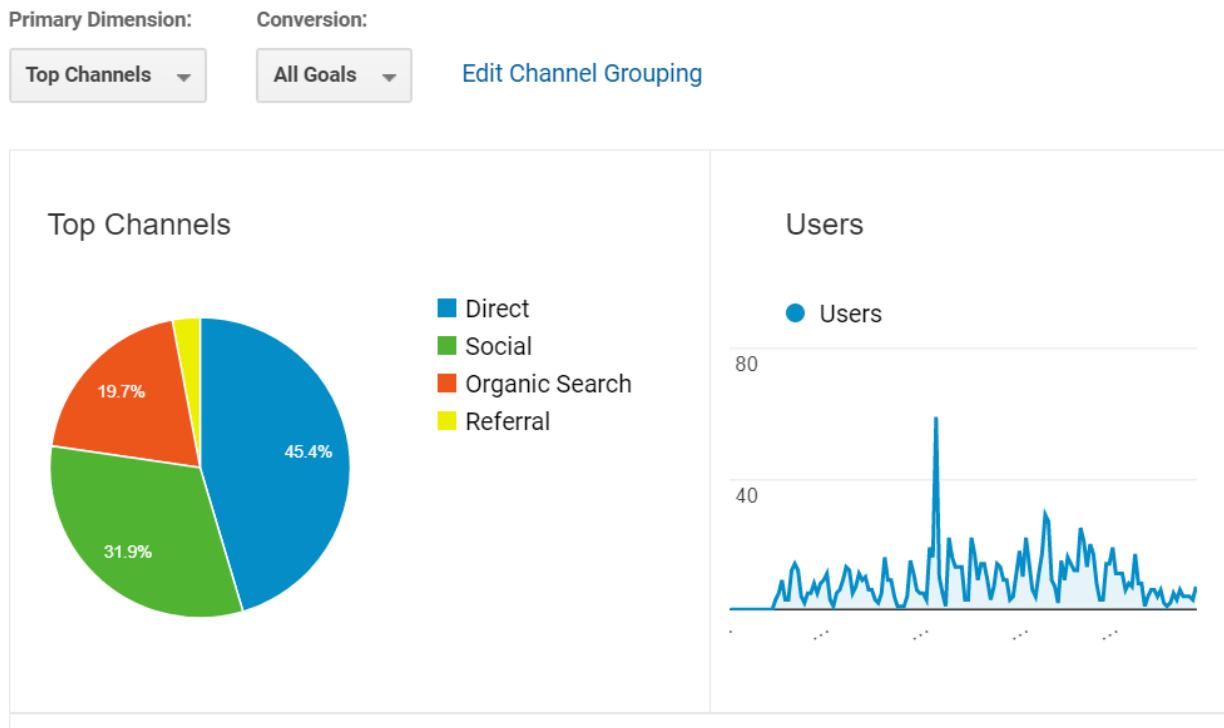
The SAE MOBILUS Subscription metrics include:

15. Upsell: existing subscribers that add a Knowledge Hub collection to their existing subscription

16. New Subscribers: new subscribers to SAE MOBILUS that subscribe to Knowledge Hubs

Third party content - What is the value of content curation

The chief value in content curation lies in its ability to filter voluminous amounts of information for our customers and potential new customers and thus reduce the time they need to search for it. Moreover, curating content positions SAE as a thought leader around the relevant and emerging technology domains associated with the SAE Knowledge Hubs.



The above image demonstrates the value of content curation from the standpoint of organic search, which is largely a result of key word associations that result by continuously curating highly shareable news. Nearly 20 percent of the traffic on the prototype site MobileGnosis.com was acquired by simply curating relevant engineering news.

Linking to curated content versus Ingesting it into MOBILUS?

It is the recommendation of this content plan that you do not want to ingest news and curated 3rd party information into a technical search platform. This is based on the following observations:

- **User Focus** - Our Customer UX interviews confirmed that users on the MOBILUS platform to execute on technical tasks. News and other curated content not technical in nature (i.e., the availability of a new training class is not a technical piece of content, while the content of that training class is.) can be distracting to the engineer engaged in a highly technical task.
- **Search Dilution** - Curated news and other third party content, while very valuable in building and engaging an audience, typically has a very short shelf life in terms of content usefulness. This is to say that a news item from last weekend is of very low value compared to a news item that happens today. As such, ingesting news and other curated items such as training, etc. may likely serve to clutter a technical search platform and thus dilute the value of it. One can imagine a user searching for papers on autonomous vehicles and finding 1,000s of old news items returned with their results.
- **Perceived Value** - News curation is typically viewed as something that is provided for free. Free things ingested into the search platform - that are not overtly technical in nature - may raise user suspicions of what they are paying for in a subscription.

It is my personal observation from several experiences that users typically don't want to pay for the convenience of free content. Content should be

convenient in and of itself as a matter of good design and respect for the customer. This is to state that a user might find it less convenient to leave MOBILUS and search for a news item, but they will likely prefer that option to paying for the convenience of otherwise free content in MOBILUS.

It is the recommendation of this content plan that MOBILUS is best served by providing subscription access to highly technical material that can't be found or aggregated elsewhere.

Note: This is not say that a free tech brief in MOBILUS should be viewed as low value. That content, since it is highly technical in nature, may be viewed as a free value add. However, news items would not meet that same criteria.

How should taxonomy be applied?

The taxonomic classification of our Knowledge Hub technical content collections should be used to seed advanced search and alert feeds for determining high value information for purposes of curation, community discussion and sharing.

Journalism — How should it be included?

Original journalism will be an important part of the SAE Knowledge Hubs content offerings. Externally, it is recommended to find SME aerospace and automotive writers that can contribute original journalism to the SAE Knowledge Hubs. This will be the featured content on the non-ingested front facing Knowledge Hubs.

Internally, great journalism abounds at SEA International. Much of this can be culled and curated for a truly distinctive subject matter expertise relevant to a particular SAE Knowledge Hub. This enables SAE as an organization to extend the value of original journalism content pieces and offer our customers more channels in which to consume content.

The SAE Knowledge Hubs stand to become a new SAE channel to engage new and existing customers with SAE content. By serving as an additional channel to deliver SAE content, the SAE Knowledge Hubs become complementary pieces in SAE's digital publication and asset portfolio.

The acquisition of published SAE articles can be accomplished through direct editorial collaboration within SAE and through cultivating a group of freelance writers who have subject matter expertise in aerospace or automotive technologies relevant to the SAE Knowledge Hubs.

Note: In 2018, an Editorial Summit meeting was held to discuss the sharing of editorial content across SAE. Another Editorial Summit could potentially help shape this editorial collaboration among the .Org website, MOBILUS, Magazines, Tech Briefs, Journals, Events, Training et al.

Currency – What practices and resources are going to be required to preserve currency in the Knowledge Hubs? What do customer and users expect?

- **Curate Daily** - Curating SAE and third party content, publishing news and other items on the Hubs must happen daily.
- **Publish 5-10 new content items daily** - Our customers expect new content daily. A suggested minimal threshold is to have at least 5 - 10 new content items should be added to the website each day. This would be the baseline content curation and should be sourced by 2 - 3 part time content curators and myself.
- **Continuously Curate** - Customers will expect continuous and new content to pour through the Knowledge Hubs. The Knowledge Hub curation team will serve as a highly valuable filter for this information, which users will come to trust and expect continuously. We want users to check the site every day to “See what’s new on the Hubs.” Therefore, it is essential that new content be posted and surfaced daily. Note that weekend traffic for most business sites tend to be less intensive.
- **Support SEO-optimization, sharing and socialization** - Content needs to be socialized and shared, or schedule for social media, on the day in which it is published on the Hubs. Socializing new content daily will also create

“referral traffic” to the SAE Knowledge Hubs. Therefore, socialization and all the other techniques, outlined above, serve to support an integrated content management lifecycle.

- **Develop consistent schedule** - Posting new content daily and consistently will directly increase the organic search discovery of the SAE Knowledge Hubs. Organic search describes the segment of SAE Knowledge Hub users who will have discovered the SAE Knowledge Hub content via a search engine such as Google. Content curation is an effective approach to building organic search because it largely is recent and ranks high in searchable keywords.

Resources Needed

It is the recommendation of this content plan that to preserve currency and to continuously publish new content, a baseline of part time freelance contractors be engaged to support the SAE Knowledge Hubs. Please see the section of this document on staffing for more information.

Usage analytics - What resources, tools, and protocols do we need to get the right kind of analytics?

It is recommended that Google Analytics be used for obtaining real time, in-depth analytics. Additionally, key performance indicators need to be established, conversion metrics and goal completions. Integration with sales and marketing is necessary to track the effectiveness of content from creation to a user desirable outcome.

Key performance measures should be compared to previous reporting periods and correlated against any promotional campaigns of note. Generally the metrics that should be tracked include:

- **Audience metrics** - Understanding who is visiting the Knowledge Hubs
 - Users - site visitors
 - New Users - users who are new to the website for this time period
 - Sessions - How long a user is on the site browsing content
 - Pageviews - the number of pages viewed
 - Average session length
 - Bounce Rate - Users who visit and leave a page without clicking other site links.
- **Demographical data** - Understanding our audience uniqueness
 - Age - are we reaching our intended user age groups - younger audiences? Senior audiences?
 - Gender - is our audience male or female and how might this shape content we post

- Interests - what are the general interests of our site visitors - what do they have an affinity for searching for online? What are they in the market to buy?
 - Geolocation - where are our users coming from
 - Behavior - what do users do once they are on the site? What pages do they engage with
 - Technology - mobile, desktop, tablet stats... Browser, devices
 - User flow Benchmarking - How do the Hubs compare against similar sites.
- **Acquisition based analytics** - Knowing where audience is coming from
 - How are we acquiring new users - social, organic, referrals, direct?
 - How are ad campaigns delivering users?
 - How are paid keywords delivering users?
 - Cost analysis should be performed for the effectiveness of each channel.
- **Behavior metrics** - Do we know what they are doing on our site?
 - What is the most popular content
 - Pageviews, unique pageviews
 - Average time on page
 - Bounce rate
 - Page exit percentage rates
- **Conversions - KPIs** - When a favorable interaction happens, we need to measure it.
 - Goal URLs and goal events - a conversion should be established for users clicking “Access Mobilus” links or “Learn more about MOBILUS”. These are the key lead gen metrics.
 - Traffic from the Knowledge Hubs should be ideally tracked to a final sales purchase on SAE.org or MOBILUS. The integration of such tracking metrics can be a partnership effort with .org and MOBILUS.
 - Conversion and Key Performance Indicators should be the chief criteria to judge the success of the SAE Knowledge Hubs.

- Ecommerce tracking - when premium services are identified and implemented on the Knowledge Hubs, tracking of purchases would fall under Ecommerce analytics.

A mix of the following analytical tools are recommended:

- Google Analytics
- Alternatively, Adobe Analytics
- Marketo
- Other specialized web traffic analyzers

Audience and acquisition metrics can also be supported with a mix of the following services:

- Hootsuite Pro
- Buzzsumo
- Curata
- DemandBase

Original writing - How should SAE leverage it's own in-house journalism?

What kinds of original content do we need to develop? What tone and style works best for us

To develop a unique voice, freelance writers and internal and external subject matter experts and content producers should be engaged as freelance writers to regularly contribute to the Knowledge Hubs.

Aerospace Original Journalism for Hubs - Subject Matter Experts

- It is the recommendation of this content plan that I will work with Michael Thompson and staff on identifying potential engineering subject matter experts that can contribute to Knowledge Hubs relevant to aerospace (Connected Aircraft)
 - 1 subject matter expert (example: Will Kucinski)

Automotive, Ground Vehicle Original Journalism for Hubs - Subject Matter Experts

- It is the recommendation of this content plan that I would work with John Tintinalli and staff on identifying relevant subject matter expert writers who would contribute to relevant automotive Knowledge Hubs (autonomous vehicles, connected, cybersecurity, electric vehicles)
 - 1 subject matter expert (TBD)

SAE Magazines, Tech Brief Media Group - Other potential sources for Subject Matter expertise Writing

- I would further work with Bill Visnic and Joe Pramberger on identifying writers who could potentially write, guest blog, or contribute exclusive pieces for the SAE Knowledge Hubs.

External Journalism Sources

Other sources for discovering journalism resources could include the following:

- Post adds - Craigslist
- Event networking - face to face, find potential SMEs that can writer
- Test and hire
- Content Mills - Textbroker, Writer Access, Zerys, Constant Content

Features and functionality - What features and functionality should the Knowledge Hubs include based on user input.

The recommended features and functionality of the SAE Knowledge Hubs should include the following:

- **Directory component** - Based on user interviews, there is a marketplace need to understand who's who in many mobility engineering technology fields. A directory tool that is easy to manage and one that supports user generated content, is highly suggested.
- **Article management component** - The Knowledge Hubs need require the functionality of a modern CMS solution. There must be a separation of content and development and any content that appears on the Knowledge Hubs should be immediately accessible to an authorized editor.
- **User Generated Content Support** - User interviews have repeatedly surface a need for a place to contribute and come together. Therefore, the Knowledge Hubs require the support of UGC (user generated content). Such content enables a scalable vision for the Hubs too.
- **Responsive design** - Content on the SAE Knowledge Hubs must be responsive in nature. Today's users are commonly engaging content on smartphones. On my trip to the University of Dayton, the librarian John

O'Gorman said that students will only access this Hub content on their smartphones. It's all they use.

- **Completely integrated publishing workflow** (e.g., author > editor > publisher) - The SAE Knowledge Hubs should provide its editorial staff a means for a self contained workflow. Articles should be enabled to be added, edited and published from within one CMS.
- **User management system** - For the SAE Knowledge Hubs to support a community of users, it must offer a robust tool for community management (e.g., approval of users, deletion of users, banning and moderating users).
- **Events management component** - The system needs to enable a content contributor to add and manage an event.
- **Training management component** - The CMS system needs to enable a content contributor to add or manage a training item.
- **Forum support for collaboration** - The CMS should support a modern forum component for enabling user collaboration and discussion around Knowledge Hub technology domains.
- **Advanced Search** - The search functionality must make it an easy task to search all non-ingested SAE Knowledge Hubs content.
- **Shareable, SEO optimized content URLs** - This is practically a must requirement. Over 50 percent of the traffic on the SAE Knowledge Hub test site Mobile Gnosis was acquired through organic and social channels. This is result of shareable SEO optimized URLs.

Tone and Style

The tone and style of Knowledge Hub content offers opportunities to engage users with strategically more conversational content than SAE may traditionally be accompanied to doing. Moreover, user testing has revealed two general personas that should be accounted for when providing a contextual base for tone and style. The primary personas could be said to include the following:

- **Engaged, Focused Engineer** - This is an engineer focused on solving an engineering problem and his content requirements must be highly technical nature.
- **Information seeking, leadership engineer** - This is an engineer who may be more senior in position or in the mindset to discover and learn what is going on within an industry segment.

Note: The UX plan by John McBride and submitted as part of the SAE Global Product Manager strategic initiative for Q1 2018 provides detailed inquiry into the user personas. Please see that document for a refinement of the user personas discussed in this section.

Tone and Style - Engaged User

With our users personas in mind, there is the need for delivering highly technical, content to the engineer who is engaged in solving an engineering problem. This tone and style can be described as follows:

- Technical
- Straight forward
- Detail oriented

Tone and Style - Leadership, Information Seeker

For the senior engineer, engineering leader or general information seekers, identified again as part of our user interviews, an opportunity exists for more relaxed, conversational tone and style.

Oftentimes, this relaxed conversational tone and style falls into the realm of blogging. The reason goes that engineers, like all people, enjoy a break from the hard work of solving technical problems. Thought leadership can often be effectively delivered through conversational blog postings or occasionally curating articles more popular in nature, such as an article about Elon Musk sending a car into space. This content, while low in technical value, is high in engagement value. Always, tone and style should be consistently professional in nature. Therefore the tone and style of this content could be described as:

- Relaxed
- Conversational
- Entertainment-oriented
- Strategically humorous (at times)

Selecting a CMS

The successful implementation of this proposed content plan requires enhanced technical capacity currently not available on the MOBILUS platform. These next sections describe some of the various CMS options that appear to be available for a relaunching the SAE Knowledge Hubs.

The SAE MOBILUS Platform

The SAE MOBILUS platform is an in-house designed CMS system. Proficient at delivering technical subscription-based content, it is not currently provisioned to effectively handle the non-ingested, community-oriented Knowledge Hub content identified in this document nor is it provisioned to support a content management lifecycle (CLM) required for the SAE Knowledge Hubs.

It is my recommendation that the front-facing SAE Knowledge Hubs content pages will be migrated to a new CMS solution.

HIPPO CMS

The HIPPO CMS currently powers the “Next Gen” version of SAE.org. This Java CMS enables companies to orchestrate and deliver cross-channel digital experiences. Hippo’s clean, modular architecture and support for open standards make it the ideal platform for agile development and open integration.

My impression of HIPPO is that the HIPPO CMS is a modern, responsive, enterprise class CMS system. It can deliver content in a manner that user experience requires.

It is not clear as of this report if it could support the community-oriented user experience and content types presented in this content plan. In particular, it is not clear how HIPPO could handle a fully-featured directory component.

As part of tactical approach to implementing this content plan, I will work and seek to partner with Marketing and IT on the feasibility of a HIPPO implementation of the SAE Knowledge Hubs vision.

Other considers for HIPPO focus on time-to-market and cost.

The Joomla CMS - An Overview of the SAE Knowledge Hubs Test Site (MobileGnosis.com)

This section provides more of a reference for the Joomla CMS. Joomla is the CMS that powers the SAE Knowledge Hub test site - MobileGnosis.com.

It is important to note that the user experience for consuming content was favored 9 - 1 over the existing Knowledge Hub presentation on the SAE MOBILUS Knowledge Hub content platform.

It is therefore recommended that the baseline for SAE technology and the user experience we want to support should be that of the SAE Knowledge Hubs prototype site Mobile Gnosis.

The Joomla CMS overview

The Joomla CMS is an award-winning, community oriented platform. Joomla! is one of the world's most popular software packages used to build, organize, manage and publish content for websites, blogs, intranets and mobile applications. Owing to its scalable MVC (model view controller) architecture it's also a great base to build web applications.

With more than 3 percent of the Web running on Joomla! and a CMS market share of more than 9 percent, Joomla! powers the web presence of hundreds of

thousands of small businesses, governments, nonprofits and large organizations worldwide.

As an award winning CMS led by an international community of more than a half million active contributors, helping the most inexperienced user to seasoned web developer make their digital visions a reality.

Here are some of the Joomla! Features as described by Joomla.org:

Multilingual

Joomla! is the most popular and widely supported open source multilingual CMS platform in the world, offering more than 64 languages. Webmasters and content creators can create websites to be presented in multiple languages, without ever needing to step outside of the options available in the Joomla! core software. This is a big step forward and represents a set of capabilities that can make websites much more accessible, reaching out to a much larger audience.

Well Supported

Our worldwide, enthusiastic community is filled with individuals, and teams of world class developers and business consultants who actively help at no cost in the forums. There are thousands of professional Joomla! service providers throughout the world who can help build, maintain and market your Joomla! projects. The Joomla! community has a vetted directory of just some of these providers at the following url: <http://resources.joomla.org/en/>

PHP 7 Support

Since Joomla! 3.5.0, Joomla! supports the most recent release of Zend's PHP: PHP 7, which provides a significant performance boost to your website. Joomla! users can enjoy the benefit of that performance improvement. Joomla! still provides legacy PHP support going back to PHP version 5.4 for web servers that have not yet upgraded.

Easy Updates

One of the big challenges with any software is keeping it up to date. Fortunately, Joomla! has a One Click Version Update feature to make this process super easy for users of any skill level. The built-in updater also has an automated checker which notifies you if anything needs updating; this includes notifications of the core software and Joomla! extensions that use this feature. Keeping your site up to date is the single best thing you can do to secure your web assets and Joomla! gives you the tools to do this with little effort.

As of Joomla! 3.5.0, thanks to the new email update notification plugin, your Joomla! website checks for the availability of new Joomla! versions and when one is found it sends the Super Users on the site an email notification.

Integrated Help System

Joomla! has an in-app contextual help system to help every level of user to operate their Joomla! website. Most pages have a help button in the top right, helping you fully understand all options on that page. There is also a glossary explaining the terms in plain English, a version checker makes sure you're using the latest version, a system information tool helps you troubleshoot. If all else fails, links to a wealth of online resources for additional help and support are available, such as Joomla! Documentation and User Forum.

Media Manager

The Media Manager is the tool for easily uploading, organizing and managing your media files and folders. You can even handle more types of files, thanks to the configurable MIME settings. The Media Manager is integrated into the Article Editor so you can access images and all other media files for easy usage and enhancement of your written content.

Banner Management

With the banner manager you have the possibility to easily add advertising and monetize your website. The tool allows you to create clients and campaigns, to add as many banners as you need, even custom codes, to set impression numbers, track the clicks and much more...

Contact Management

Not enough with just one contact form on your site? The contacts component allows you to add several contacts, departments and categories, and extend the basic contact information with miscellaneous information and an image. Easily set up a contact form for each contact you create and allow access to the public or just to some registered users, or create a listing of these contacts.

Search better, Search Smarter

With the built-in search and smart search, website visitors will be able to quickly and easily find the appropriate information on the website. And even more, thanks to the statistics you can analyze your visitors needs and streamline your content even better to serve them. You have the ability to use the included smart indexing, advanced search options, auto suggest searches - making Joomla! search the best in class right out of the box.

Content Management

Joomla! is a Content management system at heart and has some seriously great features that make organising and managing your content a breeze.

Content creation is made very easy by the inbuilt WYSIWYG editor and allows you to edit content without any knowledge of code.

After you created your content you'll find a lot of possibilities to show it on the frontend. Next to different layouts, you're able to use several pre installed modules to show the most popular articles, latest items, related articles and more.

As of Joomla! 3.5, adding an image is as easy as dragging and dropping it from your computer directly into the content. This works anywhere that you are using the default TinyMCE WYSIWYG editor. And if you want to add a module into an article, Joomla! 3.5 makes it really easy with a button directly on the editor toolbar. You don't need to learn any syntax or remember the module details as the user interface does it for you.

Nested categorization

When you are managing content, organisation is a key requirement. Being able to create categories with nesting and no limits on depth is a great plus in helping manage large websites.

Tagging

When categorisation is not enough to structure your content, it's time to look at a flat organisation structure which is best served by tagging. What's more, tagging in Joomla! also supports nesting, so limits are just not there! Start tagging.

Frontend Editing

Editing content should be easy and fast. You are reading through your site's content and see a change you need to make. No need to login to the administrative section (backend) any more for simple edits of content and modules. Simply click and edit from the frontend.

Content Versioning

You will never again lose a previous important version of your article and other changes on your site. You are now able to track exactly who made what changes, when, and, if a version note was entered, why the item got edited. Then if needed you can revert to any previous version.

Syndication and Newsfeed Management

Make sure your visitors stay updated on the new content you're adding, even when they come only once in a while. With Syndication you create a feed that users subscribe to in their favorite RSS reader and so they receive the updates. With newsfeed management, you can integrate RSS feeds to your site. Gather all posts from some of the largest news sites and show them on your site for example.

Menu Manager

The Menu Manager allows you to create as many menus and menu items as you need. You can structure your menu hierarchy (and nested menu items) completely independent of your content structure. Put one menu in multiple places and in any style you want; use rollovers, dropdown, flyouts and just about any other navigation system you can think of. Also automatic breadcrumbs are generated to help navigate your site users.

Powerful Extensibility

The Joomla! core is just the beginning, the real power is in the way you can customize Joomla. More than 8.000 extensions are available to extend your website and broaden its functionality.

You can visit the Joomla Extensions Directory at the following URL:
<http://extensions.joomla.org/>. Additionally, you can use the Joomla extension finder built right into Joomla! to see thousands of ways to enhance Joomla! to suit your needs.

Extensive ACL for all your access control needs

ACL stands for Access Control List, it allows you to manage the users of your site, and different groups. When you're managing large content portals or even intranets that means you need extensive control on who can see what and who

can edit or manage what. The Joomla! ACL is extremely powerful and can be tweaked via configuration to suit any needs you might have.

Google reCAPTCHA

Google introduced a no CAPTCHA reCAPTCHA API in December 2014. We updated the reCAPTCHA plugin to protect your login and registration forms against spam. While still supporting the old reCAPTCHA 1.0, you can now also use it for the new reCAPTCHA version 2.0. A significant number of your users can now attest they are human without having to solve a CAPTCHA. Instead with just a single click they'll confirm they are not a robot.

Collapsible Sidebar

Joomla 3.0 brought a fresh new bootstrapped look to the Joomla! admin interface and one of the major improvements was an increase in usable screen area in the Joomla! backend. Joomla! 3.4 takes this a step further by making the Extension Sidebar menu collapsible for both a mobile device and a full screen display.

Two Factor Authentication

Joomla! was the first major CMS to implement two-factor authentication. Add a single-use code received on your cell phone or a Yubikey to your existing passwords to make your site extra hack-proof.

Design Uncoupled

Joomla! was one of the pioneers in open source CMS's by adopting a MVC design strategy. MVC means that views are strictly separate from the business logic. This is a huge advantage since you own the views or can override them to achieve superior custom designs. Joomla! not only gives you the design freedom that you have always craved but can help you make your sites stand out in the crowd!

Responsive with Bootstrap

Joomla! is Mobile Ready and allows you to build more than just websites but online applications that can respond to virtually any device. Joomla! core templates are built with Bootstrap making it responsive out of the box. Which means you have a toolset to work with which makes creating templates even easier!

Do More with Less

Spend less time coding and reduce the tedious tasks associated with building interfaces in Joomla! 3. Joomla! now features LESS CSS and jQuery which means you can write less code to achieve greater results. In addition the Icomoon font icon library provides a wealth of retina-optimized icons. The Joomla! User Interface (JUI) library gives you a standardized backend to frontend interface.

Override Away!

With a highly advanced override system, designers get an awesome amount of power over how pages & elements of pages are presented without touching any of the core code! Practically any HTML generated by Joomla! can be customized to your project.

Beautiful Fonts for that extra edge

Designers know the power of fonts for expressing ideas and design strategies. With Joomla! you do not need to get constrained by standard Web fonts. The Joomla! core itself opens a whole new world of expression because it allows you the freedom to use Google fonts to make that new design dream come true!

Template Management

Templates in Joomla! are more than a framework for managing your designs but a powerful tool suite for making your site look exactly the way you want. You have

complete control of your presentation since you can either use a single template for the entire site or a separate template for each site section or menu item. The level of visual control goes a step further with powerful template overrides, allowing you to customize each part of your pages.

Lighter Core

Joomla! 3.4 is the first release as per the new CMS roadmap and development strategy in which the project has decided to pursue a lighter Joomla! core by removing some features from the core and making them available as installable extensions and let site owners decide what features they want.

User Management

Joomla! has a registration system that allows users to configure personal options. Out of the box, there are nine user groups with various types of permissions on what users are allowed to access, edit, publish and administer. Authentication is an important part of user management and Joomla! supports multiple protocols, including LDAP, OpenID, and even Gmail. This allows users to use their existing account information to streamline the registration process. All of this can be added onto with extensions, giving you complete control over what users can access and how they authenticate to your site.

System Features

Speedy page loads are possible with page caching, granular-level module caching, and GZIP page compression. If your system administrator needs to troubleshoot an issue, an extended debugging mode and error reporting are invaluable. The FTP Layer allows file operations (like installing Extensions) without having to make all the folders and files writable, making your site administrator's life easier and increasing the security of your site. Administrators quickly and efficiently communicate with users one-on-one through private messaging or all site users via the mass mailing system.

Cloud Storage APIs

A new API in Joomla! will allow Joomla! to access cloud storage services including Amazon S3, Google Cloud Storage, Rackspace and Dropbox. This allows sites to now use these services as content distribution networks without the need for third party extensions.

Web Services

In a web where content is being shared across multiple networks, Joomla! makes it easy to manage your content from a single location. With APIs supporting several third party services and a connector enabling requests to anywhere on the web, users and developers have a magnitude of power and data readily available to them.

Microdata library implementation

Developers will now be able to incorporate microdata more easily into their extensions and sites. From automating the Author tag in articles, to generating detailed markup for directories of information, the microdata library will significantly enhance how you can optimise SEO with Joomla.

Composer Integration

In Joomla! 3.3, we introduced code from the Joomla! Framework into the CMS; however, the method in which it was installed into the filesystem does not align with how Composer installs code. For the 3.4 release, we are integrating Composer into the CMS so that it will manage external dependencies such as the Joomla! Framework and PHPMailer.

Extension Beta Testing

A micro feature on the surface and one aimed at extension developers as well as those of our users who love to play with bleeding edge stuff, this feature will allow extension developers to now have a option to offer testing alpha and beta releases to their users who wish to test them by flagging the releases accordingly.

Content Plan - Phase I (Q2 2018 - Q4)

What follows is a general itemized list of immediate goals to support the vision of the content plan described in this document.

Phase I might be summarized as “awareness and engagement” with customer and new customers as the focus at this evolutionary stage of the re-launching of the Knowledge Hubs. As such, this content plan recommends we work toward the following items:

- **Refit the existing Hubs** - Enhance the technical capacity and the user Hub experience by integrating the technology that can support the recommended content types outline in this document. In particular, the refitting of Hubs should focus on the following:
 - **Advanced Manufacturing** - Refit with new tech and editorial support. Gain buy in and interaction with aerospace group headed by Michael Thompson.
 - **Cybersecurity** - Refit with new tech and editorial support. Work with John T, Patti Kreah and others to gain buy in.
 - **Powertrain** - Explore breaking it down into more granular topics such as electric vehicles. Work with John T. and Robert M.
- **Drive sales by focusing on “SAE Knowledge Hub Content Collections”** - Educate GPM sales to interest potential new customers in SAE’s FOO (e.g., Autonomous, Connected, etc.) Knowledge Hub Content Collection, which is supported by a community of engineers, relevant news, events, training provided for you to get the most out of SAE content.

- **Enhance CMS technical capacity and user experience** - Enhancing the technical capacity and therefore the user experience is critical to meeting, scaling and supporting the market need to effectively deliver continuous authoritative, trusted, and neutral mobility engineering content around emergent technologies.

Today's digital information consumer demands a mobile first delivery of non-technical content regarding news, training, events, directories and other information. Immediate consideration should be given to the following general solutions to enhance the technical capacity of the Hubs:

- **Explore Next Gen (Hippo)** - This is the current platform supporting the SAE.org website. Investigate it's uses for possible delivery of the content outlined in this proposal.
 - **Review MOBILUS (Current Dev Environment)** - This describes the web platform currently delivering the existing SAE Knowledge Hubs experience.
 - **Consider Joomla CMS (Knowledge Hubs prototype website)** - This is the CMS that is powering the Knowledge Hubs prototype website, Mobile Gnosis. See the relevant section of this document that describes the Joomla CMS in detail.
- **Evaluate CMS implementation / integration options** - An evaluation of current solutions should be heavily weighted towards the following considerations:
 - **Cost, support** - How expensive will the solution cost in terms of cross organizational business unit resources?
 - **Functionality feature set** - Does the solution meet and support all the content types in a professional, modern, mobile delivery system?

- **Speed to market** - How fast can the solution be implemented? Note: Do the expediency of capturing the market as soon as possible, this should be a major factor in determining a solution.
- **Encourage and provide support for community interaction** - It is recommended then that users be enabled to interact and contribute content to support a community around SAE Knowledge Hubs dedicated to emergent technologies. It is recommended that social media assets be secured and integrated into the proposed content management lifecycle:
- **Acquire social media assets in partnership with marketing** - It is recommended that the following social media assets be secured for the SAE Knowledge Hubs.
 - Domain - SAE-KnowlegeHubs.com
 - Facebook - Facebook/SAE-KnowledgeHubs
 - Twitter - Twitter/SAE-KnowledgeHubs
 - LinkedIn - LinkedIn/SAE-KnowledgeHubs.com
 - YouTube - YouTube/SAE-KnowledgeHubs.com
 - Pinterest (possibly)
 - Snapchat (possibly)
- **Explore rebranding the prototype site** - If the Joomla CMS is the best or only solution that is ready to deliver and support the SAE Knowledge Hub content plan described in this document, it is strongly recommended that it receive immediate consideration as the front-facing Knowledge Hubs CMS solution. The following items should be pursued next:
 - a. **Secure top level domains/URLs**
 - i. SAEKnowledgeHubs.com
 - ii. KnowledgeHubs.com

iii. KnowledgeHubs.SAE.org

b. **Partner with Marketing, Legal, MOBILUS and IT**

- i. Marketing - Site branding, awareness, campaigns
- ii. IT - Firewall, IT support
- iii. Legal - Compliance
- iv. MOBILUS - Integration with content collections

- **Curate automated and connected news** - Continue to support and ramp up content postings on existing SAE Knowledge Hubs while working with marketing, IT and legal to rebrand and integrate our prototype site or deploy a new CMS solution. Initial curation efforts should focus on autonomous and connected vehicle technology.

Idea: Information Hubs?

The market moves fast and under the idea that we should have been in it yesterday, it is the recommendation of this content plan that we consider two types of Hubs. Hubs that are “powered by MOBILUS” and feature a content collection (e.g. cyber, powertrain, advanced manufacturing); and those that are “informational in nature”.

These second type of Hubs do not have a content collection to sell, but instead enable SAE to start curating news, building a directory and adding training and events.

The MOBILUS content collection can be added once it is available. Until the technical content collection is available, an informational hub can point simply to MOBILUS in general.

This strategy enables us to begin building thought leadership without waiting for a collection to become available. It lays the groundwork for the collection while it is being built.

- **Start with a Silicon Valley Directory** - In an effort to build a presence in automated and connected technologies, it is the recommendation of this content plan that we focus on geographic concentrations of expertise and resources, which are not well navigated using existing online resources.

It is the recommendation of this content plan then to focus the initial construction of a directory on Silicon Valley. The directory can feature cyber, automated, connected and electrification organizations.

Additionally, I recommend attending Meetups in Silicon Valley and networking with mobility engineers there to help promote this directory.

Once the Silicon Valley market is sufficiently “seeded” another geographic center of expertise - Detroit, Pittsburgh, Tel Aviv, Frankfurt, Shanghai, Tokyo could be targeted for the next phase of the directory.

It should be further noted that this city by city approach was the approach LinkedIn first took to build out membership.

- **Start Basic non-SME, 3rd party curation** - Begin daily publishing of curated news and other added content that does not require SME input (populated events, training, organizational descriptions) is recommended to commence. Curated popular news articles and socializing that content via SEO URLs will serve to increase both organic and referral visits to the SAE Knowledge Hubs. This requires editorial support, which is covered in the next section of this content plan.

Phase I - Editorial Support

- “**Baseline” Content Curators** - It is proposed that 2-3 freelance news editors be engaged to regularly commence with keeping the SAE Knowledge Hubs updated with fresh, daily content. Per industry best practices, content curators need not be subject matter experts. They rather need to be smart and knowledgeable about digital content. To date, I have engaged the following potential candidates to establish a base of a content curation effort. These three writers could form the base for a content curatorial effort for the Knowledge Hubs.
 - **Sarah Mincin** - Sara has a background in STEM education, experience in web writing and web design. She has been curating news on the SAE Knowledge Hub prototype site MobileGnosis.com.
 - **Mark Miller** - IBM contract writer available for part time work. Mark offers over 15-years professional marketing and content writing experience.
 - **Carly Moore O’Connor** - Carly has experience on the Mobile Gnosis website, where she has produced directory listings.

Note: Content curation requires daily publishing. Therefore, it is more easily accomplished by having several part time contractors engaged to contribute a 1 or 2 hours of work daily versus 1 person to do it all.

- **SME Contributors** - It is the recommendation of this content plan that I will work with aerospace and automotive SAE directors to identify SME writers respectively to contribute relevant aerospace and automotive content.

Content Plan - Phase II (Q1 2019)

While the chief purpose of the content plan for Phase I could be summed up as raising awareness, building user engagement, driving MOBILUS usage and new customer discoverability, Phase II envisions an elevation of the SAE Knowledge Hubs into the world of cognitive, AI, NLP (natural language processing), social sentiment analysis and enhancements with other modern big data, IoT technologies.

It is the recommendation of this content plan that Phase II include the introduction and implementation of premium SAE Knowledge Hub services, which could further offer additional monetization possibilities for the SAE Knowledge Hubs.

Premium Features

Note: Following items are sourced in collaboration with UX Manager John McBride. Further details are available in John's UX report submitted at the end of Q1 2018, as part of SAE's strategic objectives.

Premium features could include the following:

- Expansion of vision to international clients e.g. forums based on EU standards etc.
- Online Access and opportunity to have ideas heard and considered by committees.
- Early access to tech papers or standards (WIP's)

- Data - aggregate data from various Hub relevant sources e.g. data around cybersecurity (More UX research would be needed, to establish what the true value of the data could bring to the customers).
- Data on the most popular downloads by hub and/or by individuals organizations if user access via IP.
- VIP access at SAE and partner events (meet and mingle with talkers)
- Unique access to thought leaders via a web portal
- Access to training and learning videos (possible 2nd gate for people who only want this experience e.g. Lynda.com)
- Webinars - Recorded and Live
- App - valuable insights etc.
- Social opportunities - arrive n drive for members (location based), meetups etc.
- Tools to help with job - (More UX would be needed to establish what these could be)
- Customization of hub content - allowing user to custom create member page with additional tools available.
- Opportunity for user to set up an email blast or news delivery system for their specific content only.
- Business directory owner
- Premium industry analytics
- Premium enterprise services and group access

Other Phase II Considerations

Other Phase II considerations might include the following:

- **Expanded Editorial Needs** - Full time employee? More freelancers? Other specialists

- **Increased IT and Marketing Resources** - Increased budget based on ROI from Phase I. We might also explore the development of a app. The SAE Knowledge Hubs might also focus on producing its own events.
- **LMS capability** - Due to the knowledge sharing nature of the Knowledge Hubs, integrating fully-featured learning management system capabilities into the Hubs might be explored.

Note: The Joomla CMS used by the SAE Knowledge Hub test site MobileGnosis.com offers LMS plugins to support online courses.

LinkedIn Business Model

This content plan proposes that the LinkedIn business model be studied to formulate a road map for monetization of premium services for the SAE Knowledge Hubs.

According to Investopedia.com, In 2014, 61% of third-quarter revenue for LinkedIn, totaling \$345 million, came from recruitment services sold to both professional recruiters and employers. Marketing accounted for 19% of total revenue, or \$109 million, from a combination of advertising sold to online marketers and the sale of "sponsored updates" posted to a target audience of members in the LinkedIn feed.

The remaining 20% of revenue, or \$114 million, was generated through premium subscriptions.

Although it's free to join with a basic membership, LinkedIn makes money selling premium subscriptions to job seekers, professional recruiters, businesses and sales professionals. Premium subscriptions allow members to increase their search results significantly, send messages on LinkedIn's email system rather than

just receive them, contact members outside of their networks and see information about people who have viewed their profiles. Since basic membership is free, LinkedIn makes a good portion of its revenue from a minority of its users: Only 15.1% of total users had premium subscriptions as of May 2014.

While LinkedIn enables user to manage their online professional identities, the SAE Knowledge Hubs stand fill a similar need but in a highly specialized industry where folks have a need to know who is who and how they can inform others about who they are within the fast moving technology driven engineering domains. This notion is further noted by University of Dayton engineering library John O'Gorman that the information landscape for engineers in highly fragmented.

SAE Industry Analyzer

Building on the idea of a one-stop-shop, the next level for the SAE Knowledge Hubs might be a custom implementation of cognitive AI services to provide premium industry analytics. Registered users might just get the content curation but premium users might get AI powered industry insights.

The screenshot shows the IBM Watson Discovery News service interface. At the top, there's a navigation bar with links for "Get Started", "API Reference", "Documentation", "Fork on GitHub", and a purple button "Start for free in IBM Cloud". Below the navigation is a search bar with the query "Boeing" and a magnifying glass icon. To the right of the search bar are four time range buttons: "Last Week", "Last 2 Weeks", "Last Month", and "Last 2 Months".

Top Stories View Query

Discovery can pull a list of the most recent and relevant news articles about this company.

2/21/2018 10:02pm
Boeing reportedly gets Hawaiian Airlines to cancel Airbus A330-800neo order for 787 Dreamliners
 bizjournals.com | Score: 11.995746

2/24/2018 12:02am
Boeing (NYSE:BA) Issues Earnings Results, Beats Expectations By \$1.89 EPS
 thelincolnliononline.com | Score: 11.990941

2/20/2018 01:02am
OC Oerlikon : Oerlikon and Boeing to Create Standard Processes for 3D-Printed Structural Titanium Aerospace Parts | 4-Traders
 4-traders.com | Score: 11.986484

2/21/2018 10:02pm
Qantas CEO increasingly bullish on the Boeing 797
 ausbt.com.au | Score: 11.984459

2/22/2018 12:02pm
 Boeing defense minister says Boeing

Top Entities View Query

Discovery can easily extract frequently mentioned entities - such as people, topics and companies - from the set of articles.

Topics Companies People

Boeing United Airlines
 International trade United Kingdom United States
 Southwest Airlines Delta Air Lines Airline Boeing 787
 Stock market

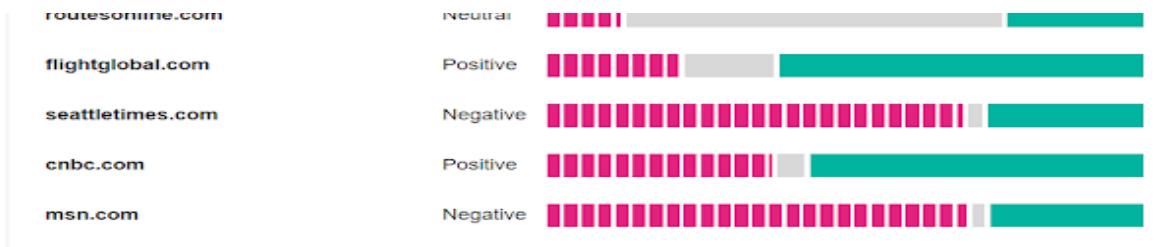
The above image captures a demo page from IBM's Watson Discovery News service. Such a cognitive service could white labeled and provided as an SAE

premium service of Hub subscribers. Such technology could be built into a premium SAE Industry Analyzer tool.

Other services that could be built into a premium industry app, might include:

- **Natural Language Processing** - speak and search the Hubs like “Siri”
- **AI chatbots** - Lead people to exactly what they want
- **Visual recognition** - Might be interesting for accident reconstruction.

Phase II stands to be an opportunity to capitalise on audience that was acquired in Phase I.



Anomaly Detection

[View Query](#)

Anomalies - days with an unusually high number of mentions - can be detected in news articles over a specified timeframe.

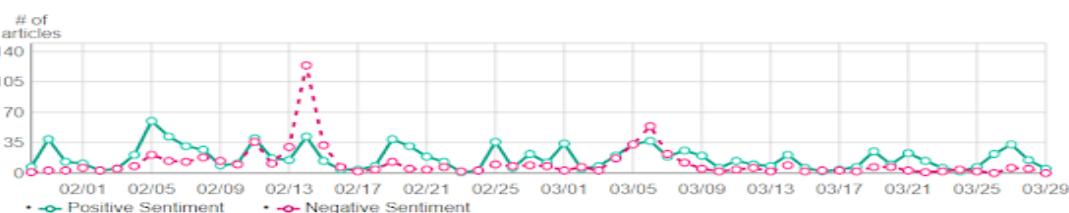


Co-Mentions & Trends

[View Query](#)

Discovery can identify frequently co-mentioned entities and follow trends in sentiment.

Topic	Number of Mentions	Sentiment
Boeing + Airbus	1838	Positive



Boeing + Airbus	1838	Positive
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Boeing + Trump	1129	Negative
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Boeing + Delta	776	Negative
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Boeing + United Airlines	664	Negative
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The image above displays sentiment and trend analysis. Such functionality could be made available as a SAE Knowledge Hub Industry Analyzer and geared toward a specific technology domain (e.g. Cybersecurity, Advanced Manufacturing, etc.)

Knowledge Hub Leadership

What follows is a listing of key personnel required to support the successful vision of the SAE Knowledge Hubs for Phase I of the content plan outlined in this document. This section begins with a description of the SAE Knowledge Hub Product Manager accountabilities.

- **SAE Knowledge Hubs - Product Manager**

I propose that I am responsible for guiding the success of the KHS and leading the cross-functional team that will be responsible for improving them. As such, I will set the strategy, roadmap, and feature definition for the KHS product or product line.

I propose I can deliver the deep product expertise needed to lead the organization and make strategic product decisions about the KHS. I will work to analyze market and competitive conditions, laying out a product vision that is differentiated and delivers unique value based on customer demands. I will provide strategic to tactical direction and provide important cross-functional leadership — most notably between engineering, marketing, sales, and support teams.

I will be responsible for defining the why, when, and what of the SAE Knowledge Hubs. I will lead a cross-functional team to deliver the KH vision from conception all the way through to its launch and throughout the PLM.

Knowledge Hub Strategy

I will be responsible for setting a product vision and strategy. I will clearly articulate the business value to the product and sales teams so they understand the intent behind the KHS or new KH releases. I propose to own the roadmap and will prioritize building what matters most to achieve the strategic goals and initiatives behind the product.

Knowledge Hub Releases

I will propose to develop release plans and the timeline for implementation. I will define the release process and coordinate all activities required to bring the product to market. I will bridge gaps between different functions within the company and align all of the teams involved — namely marketing, sales, and customer support.

Knowledge Hub Ideation

I will own the creative process of generating, developing, and curating new ideas. I will recommend to senior management which ideas should be promoted into features to push the product strategy forward — namely those that will achieve key objectives for the product line and business. To this end, I will ensure that feedback and requests are seamlessly integrated into their product planning and development processes. I will communicate the status of ideas back to the customers, partners, and internal team members who submitted them.

Features

I will prioritize features by ranking them against the strategic goals and initiatives. This requires making difficult trade-off decisions based on the value that new features will deliver to customers and to the business. I will be responsible for defining the requirements for each feature and the desired user experience.

I will work closely with engineering on the technical specifications and ensure that teams have all of the information they need to deliver a complete product to market.

Additional Thoughts on Knowledge Hub Leadership

It is my strong recommendation that one person should steer the vision of the SAE Knowledge Hubs and work with SAE MOBILUS Manager and SAE MOBILUS UX Manager to integrate the front end technology and user experience of the new SAE Knowledge Hubs into the MOBILUS technical platform. I believe I am uniquely suited to drive that vision based on over 20 years experience working with and producing the type of digital content required to ensure success for the SAE Knowledge Hubs.

In the proposed capacity as the leader of the SAE Knowledge Hubs, I offer 20 years experience and unique blend of both technical and creative content skills and experiences.

Conclusion

This content plan described a position on content creation for the SAE Knowledge Hubs, specifically with regard to what kind of content users demand and what kind of user experience they prefer when engaging with SAE Knowledge Hub Content.

The recommendations in this content plan were based on user interviews conducted by myself, John McBride, and Colleen Wolfe. Some of the research was done prior to when John and I joined SAE.

This content plan is to be considered in context of other submitted reports by John McBride and Colleen Wolfe.

This content plan further described the role of journalism, content curation, analytics, maintaining currency, Knowledge Hubs features and functionality and potential new opportunities to monetize premium content features.

I believe this content plan presents a grand vision of the SAE Knowledge Hubs as a world-class premier resource for mobility engineers and a framework for achieving that distinction in the global marketplace.

Sincerely,

-- Matt De Reno