A Comparison of Systems and Features

Environmental Scan of Social Media Platforms Popular with Young Learners

Prepared for
The Smithsonian Center for Learning and Digital Access

Prepared by
Navigation North Learning Solutions

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NAVIGATION NORTH

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Learning and Digital Access

The Smithsonian Center for Learning and Digital Access (SCLDA) uses all the Smithsonian offers to empower learners to explore their interests and collaborate with others to bring ideas to life. The organization creates models and methods that make the Smithsonian a Learning Laboratory for everyone. Guided by the Smithsonian's mission of the increase and diffusion of knowledge, SCLDA was established to re-imagine and ultimately reinvent the way students, teachers, and lifelong learners interact with and use the Smithsonian's resources in the 21st century. Recognizing most will never visit Smithsonian museums, SCLDA set out to identify how it might best enrich education by making Smithsonian experts and collections accessible to everyone regardless of where they live.

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Background

Since 2011, the Smithsonian Center for Learning and Digital Access (SCLDA) has strived to better understand and address the needs of educators utilizing digital assets through a variety of research and user testing studies that have led to the creation of a new digital learning platform, the Smithsonian Learning Lab (SLL)[1]. The Smithsonian Learning Lab provides access to the digital resources from across the Smithsonian's 19 museums, 9 major research centers, and the National Zoo, to be used as real-world learning experiences. With a repository of over 1.6 million objects and a new resource being digitized and added every 6 seconds, the Learning Lab provides specialized tools to aid in the discovery and creative use of its rich digital materials. For students using the Learning Lab, it is designed to aid in building lasting knowledge and critical skills that take learners from simply finding resources to thoughtful selection, examination, organization, and creation of new resources.

The SLL, as it currently exists, was largely informed by the input and practice of diverse and effective educators.[2] Therefore the goal of this Environmental Scan, as a piece of a larger research effort, *Understanding the Needs of Student Users of Digital Smithsonian Resources,* focuses on the features of existing social media platforms and tools commonly used by students. While not intended to be a mere validation of SLL's features, the design for this review and summary report is to lend additional insight into how digital systems, tools, pedagogy and content, can be adapted to better meet students' learning needs. As educational psychologist Paul A. Kirschner[3] points out, "If the student is viewed as the end user… participatory design needs to include a more direct participation/contribution of the student in the design of (technology enhanced) learning environments". The overall project will assimilate the findings of this Environmental Scan along with other research to address some key questions around methods or requirements for enhancing student motivation and engagement with digital content and tools.

1. What are the ways that students engage with digital content in academic settings?
2. What are the motivations for student use of digital content?
3. What are the interface requirements/scaffolds needed to enable and enhance student engagement with rich digital resources?

[1] Milligan, D., and M. Wadman, M. 2015. "From Physical to Digital: Recent Research into the Discovery, Analysis . . ."
<http://mw2015.museumsandtheweb.com/paper/from-physical-to-digital-recent-research-into-the-discovery-analysis-and-use-of-museums-resources-by-classroom-educators-and-students/>

[2] "smithsonian-digital-learning - Teacher Toolkit (Research Findings)." 2013. 28 Sep. 2016
<https://smithsonian-digital-learning.wikispaces.com/Teacher+Toolkit+(Research+Findings)>

[3] Kirschner, P. A. 2015. "Do We Need Teachers as Designers of Technology-Enhanced Learning?"
<http://link.springer.com/article/10.1007/s11251-015-9346-9>

Methodology

In the area of Social Media Systems/Platforms[4], all systems identified were assessed for various features and tools across three (3) distinct categories. Categories and the relative facets examined were generated based on an analysis of dominant features found across various social media applications. Systems analyzed were initially cited as those most used by teens across the United States according to a number of comprehensive publications:

- **The Pew Research Center's "Teens, Social Media & Technology Overview 2015"**
- **The New Media Consortium and the Consortium for School Networking's "Horizon Report: 2015 K-12 Edition"**
- **Common Sense Media's "16 Apps and Websites Kids are Heading to After Facebook"**
- **Digital Youth's "Kids' Informal Learning with Digital Media: An Ethnographic Investigation of Innovative Knowledge Cultures"**

All systems identified were assessed for various features and tools across three (3) distinct categories. The review determined if a system did or did not have the feature or tool, and did not attempt to determine the relative effectiveness of any one tool. Categories and numbers of assessed features were tallied and reported in terms of overall % (listed in order of most addressed features):

1. **Community Collaboration Tools and Features**
   a. Sub-elements included: Groups, Discussion, Communication, and User Activity Management
   b. Systems on average addressed **49.6%** of the 23 specific facets assessed
2. **Resource Management Tools and Features**
   a. Sub-elements included: Resource Discovery, Resource Sharing, Export/Download, Reuse/Remix/Modify, and Resource Store/Save
   b. Systems on average addressed **40.6%** of the 32 specific facets assessed
3. **Overall Design (UI/UX) Features**
   a. Sub-elements included: General User Interface, UI Personalization, Customize Profile, Form Factor Design Elements, General User Experience, Accessibility, and UI Learning Layer
   b. Systems on average addressed **34.1%** of the 17 specific facets assessed

The data collection and analysis tool developed by the project team and used to analyze each of the social media systems can be found here: **Group 1 / Group 2**
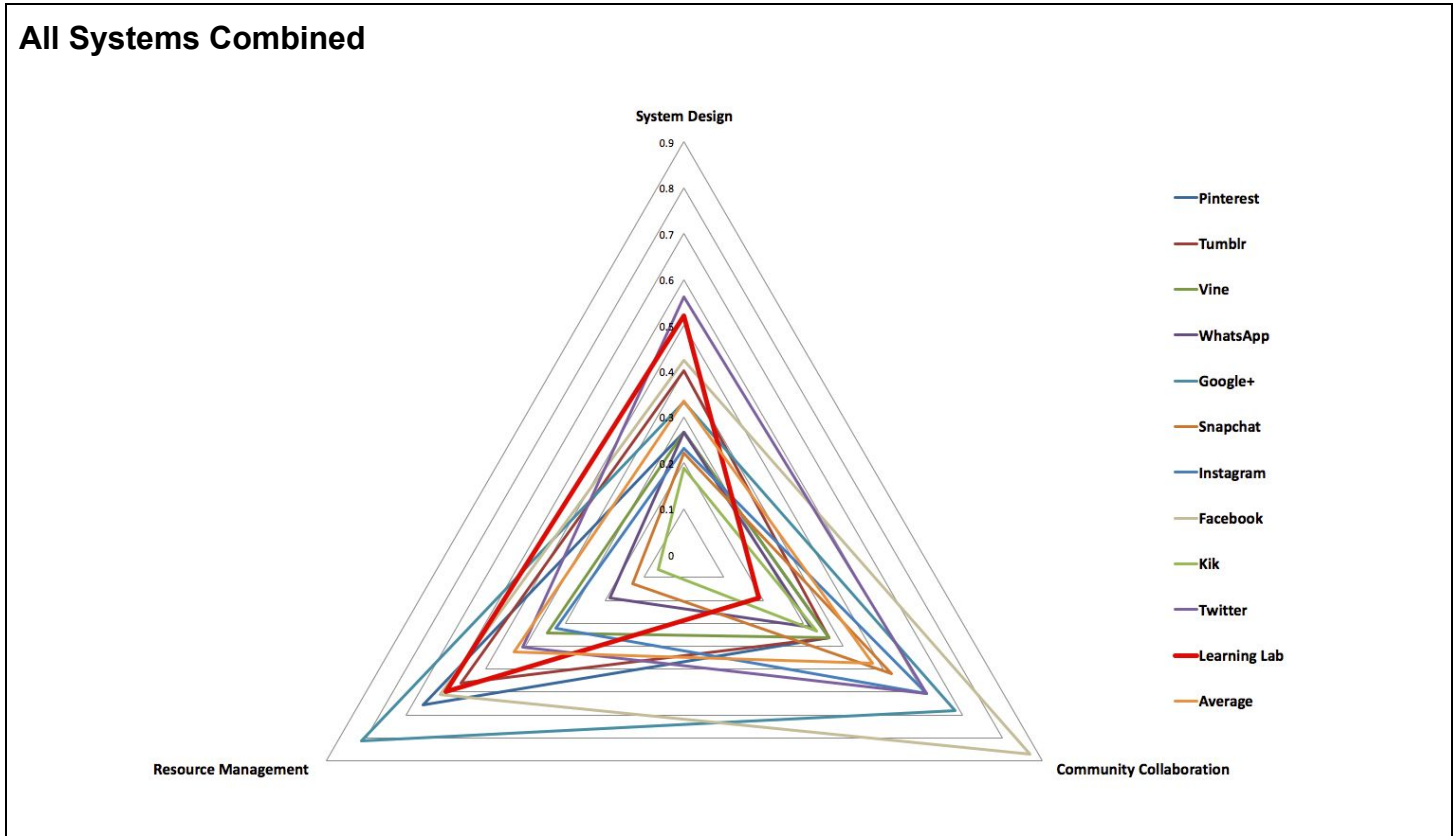
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[4] Social Media Systems/Platforms are web-based sites and applications that provide users the means to engage in, develop, customize and promote community engagement, conversation and user-generated material.
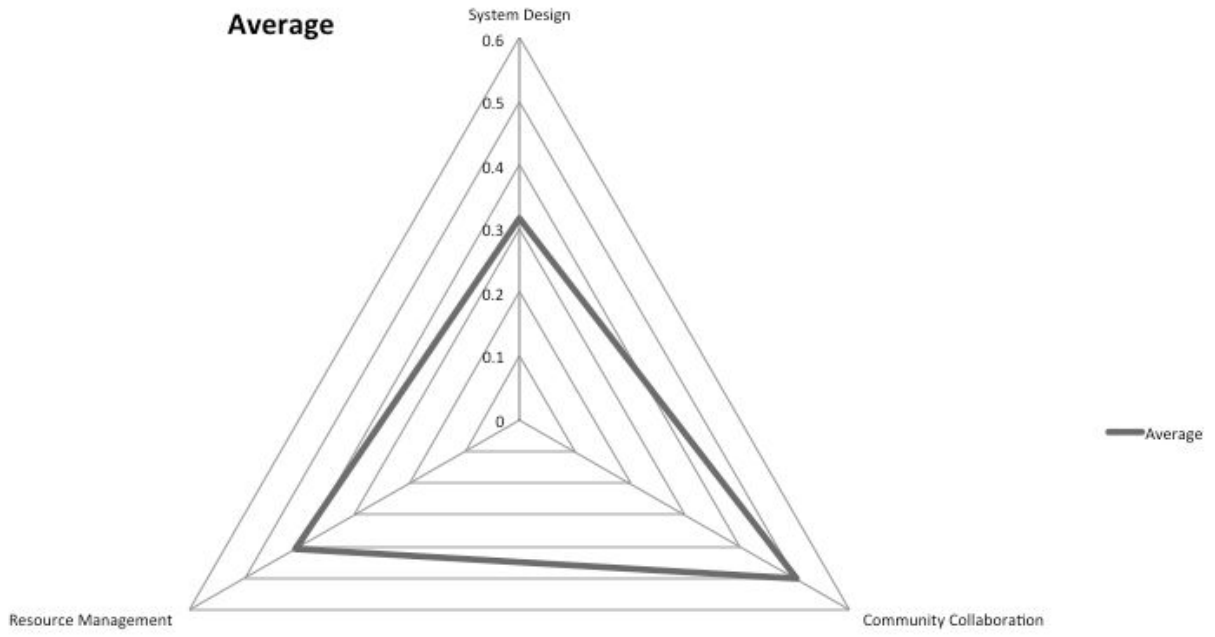
Findings

The following visualizations provide a comparison of data where similar features/tools did or did not exist in each system. Radar charts were used as the method of presenting data across different learning applications. These provided a means to compare three categories as graphed elements simultaneously.

- Chart 1 is a compilation of all systems' results for all four categories, compared to the SLL (shown in red).
- Chart 2 is an average of results for all systems.
- Each chart thereafter shows independent system's results as compared against the overall average to indicate where systems focused their features and tool sets.

All Systems Combined

Average of All Systems

Average

System Design
Resource Management
Community Collaboration

— Average

Smithsonian Learning Lab

The Learning Lab infuses real-world experiences into learning to build lasting knowledge and critical skills that take learners from simply finding resources to thoughtful selection, organization, and creation of new resources.
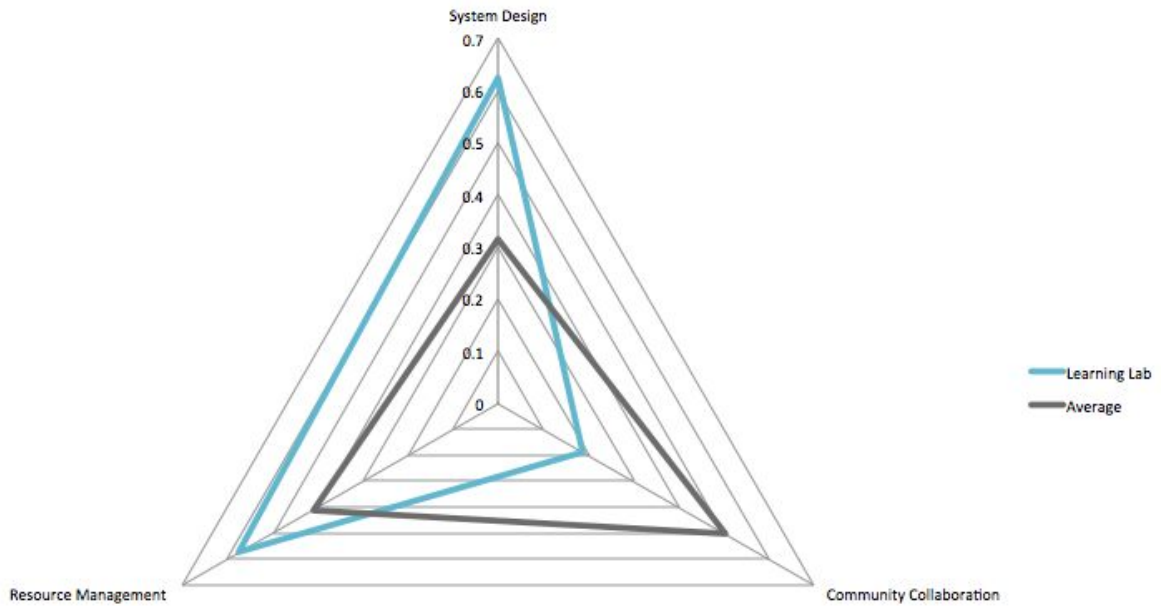
Snapchat

Mobile messaging app that allows you to send annotated videos and pictures, both of which will disappear a few seconds after viewed.
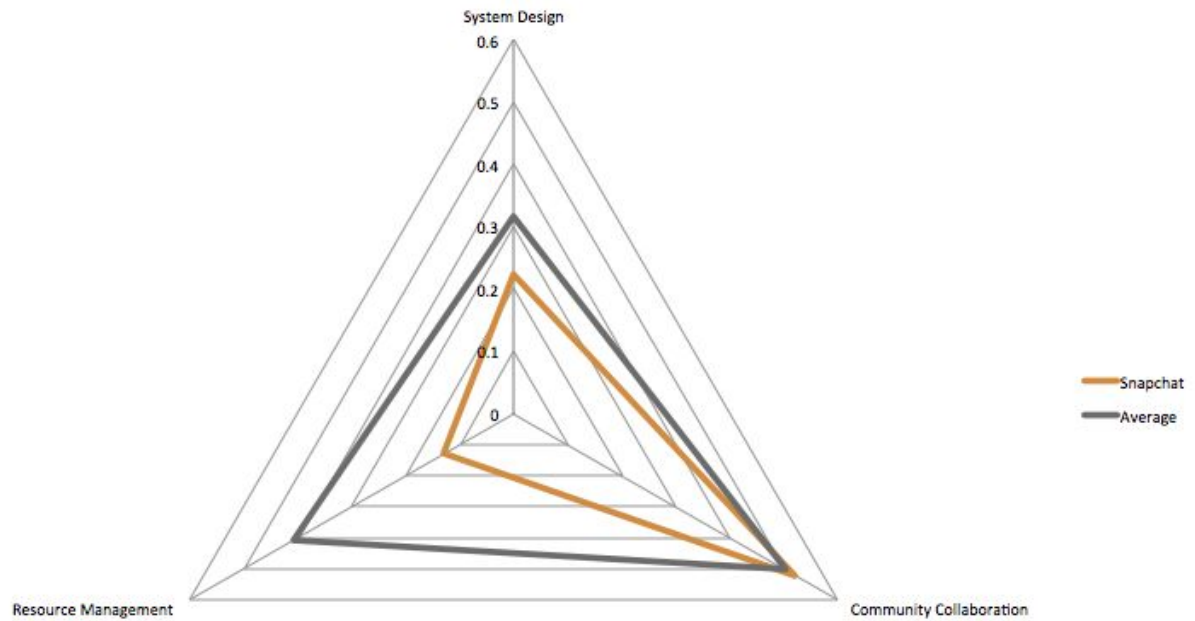
Instagram

Instagram is an online mobile photo-sharing, video-sharing, and social networking service that enables its users to take pictures and videos, and share them either publicly or privately on the app, or to other social media platforms.
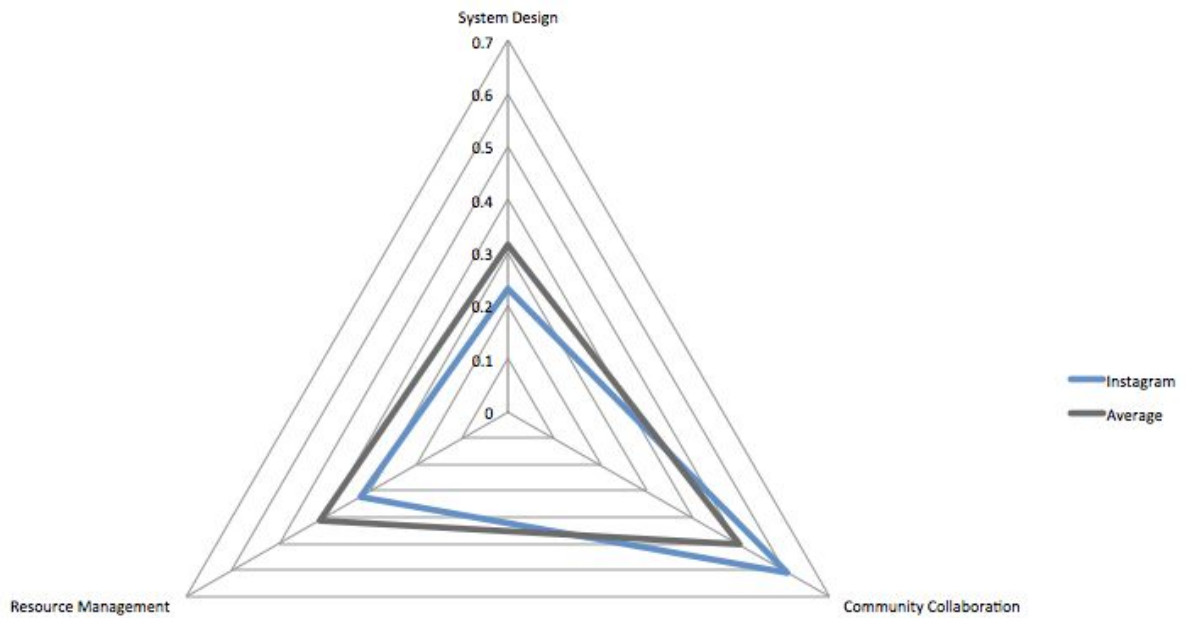
Facebook

A social networking website that allows registered users to create profiles, upload photos and video, send messages and keep in touch with friends, family, and colleagues.
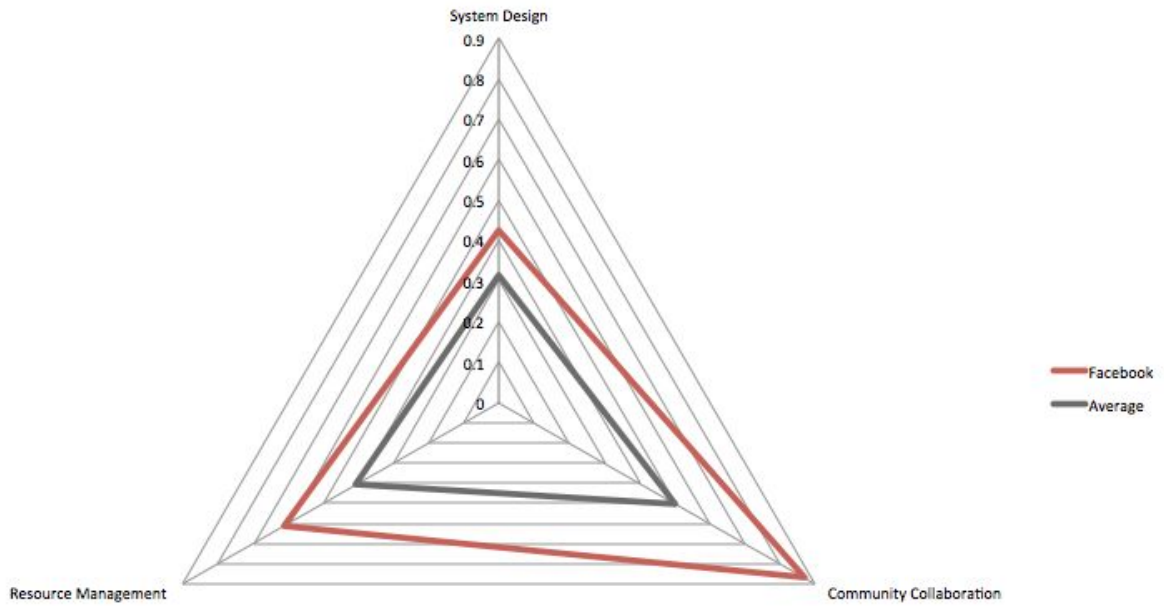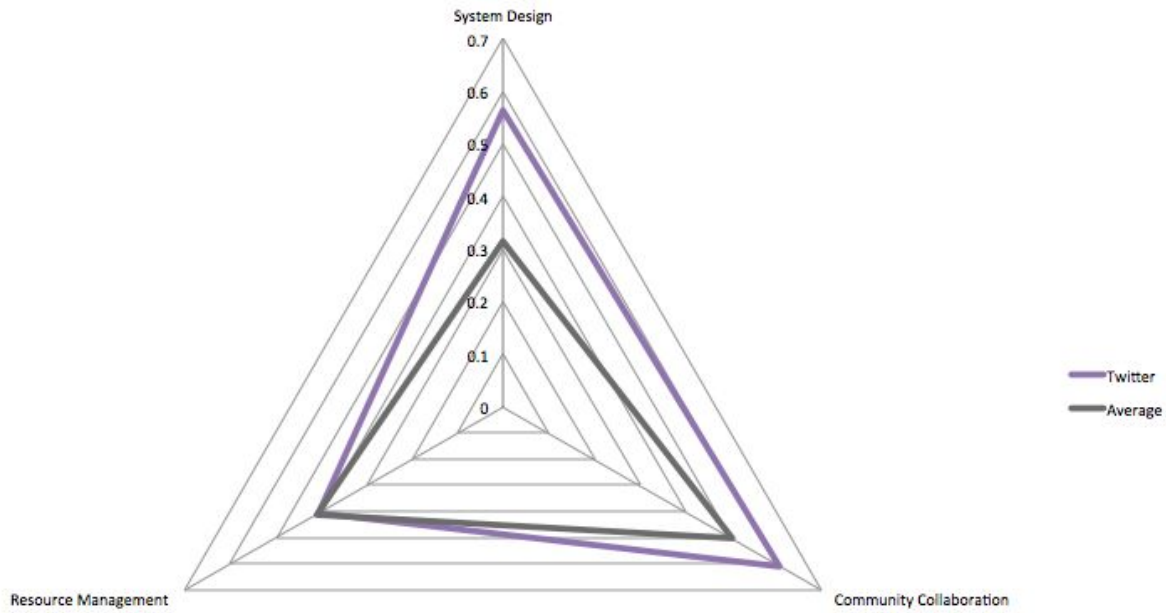
Kik

An instant messenger mobile app used to transmit and receive messages, photos, videos, sketches, and other digital content while preserving a user's anonymity beyond just their username.
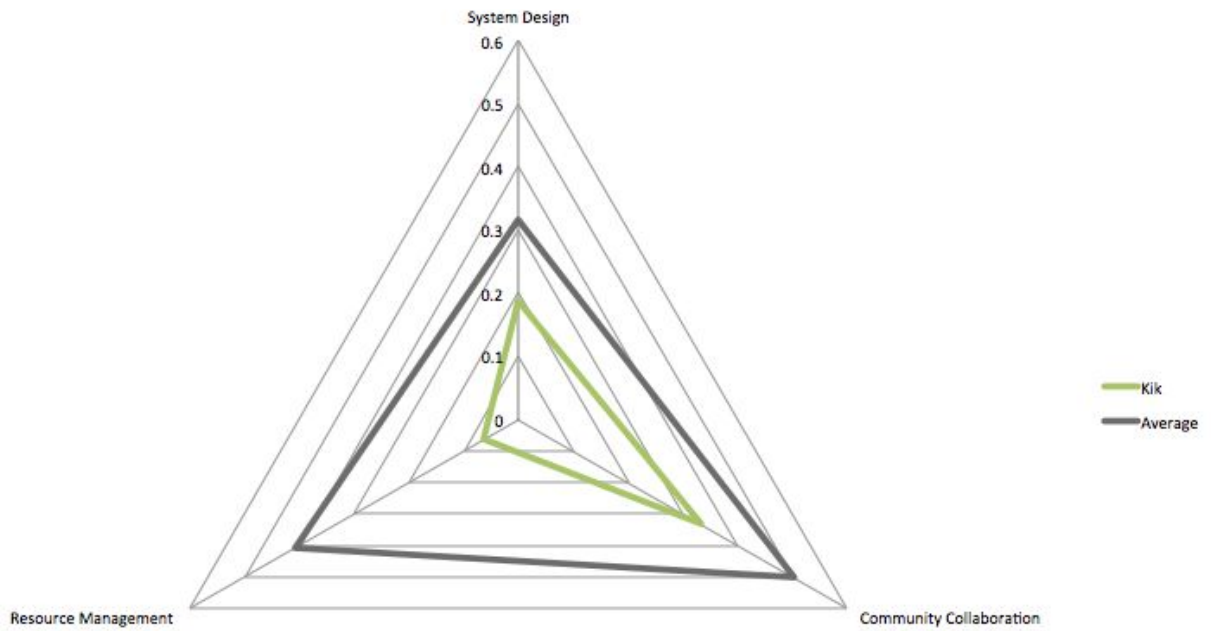
Twitter

An online social networking service that enables users to send and read short 140-character messages called "tweets" with features to embed links or images.

Pinterest

Pinterest is a photo sharing web and mobile application. Users can upload, save, sort, and manage images—known as pins—and other media content such as video through collections known as pinboards.
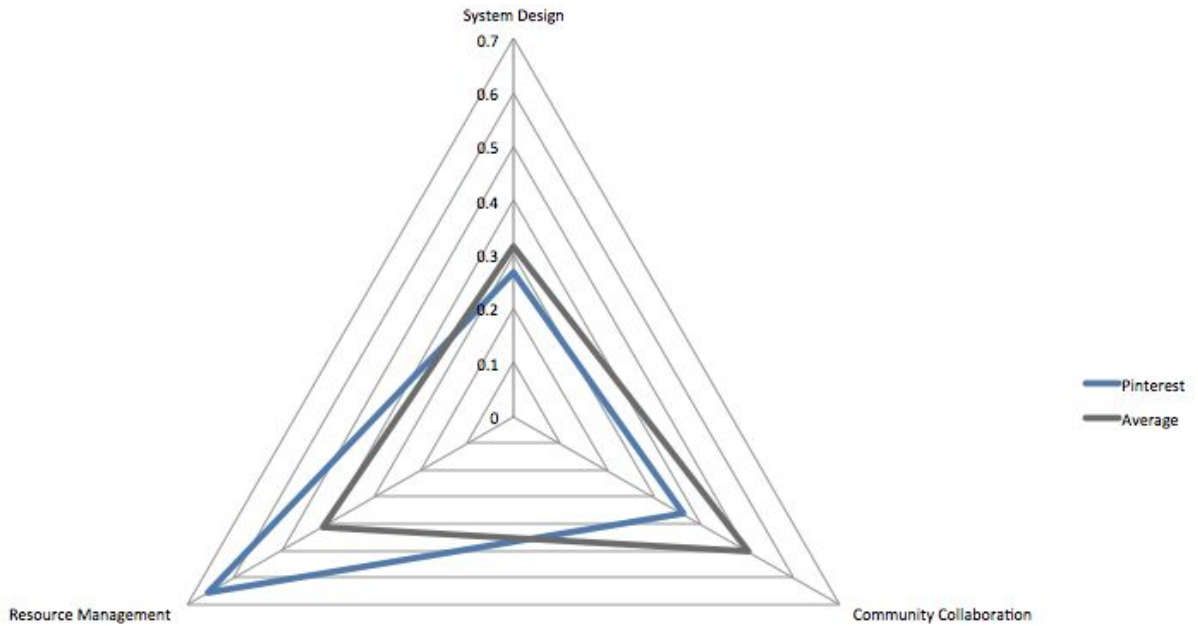
Tumblr

Tumblr is a microblogging and social networking website that allows users to post multimedia and other content to a short-form blog. Users can follow other users' blogs. Bloggers can also make their blogs private.
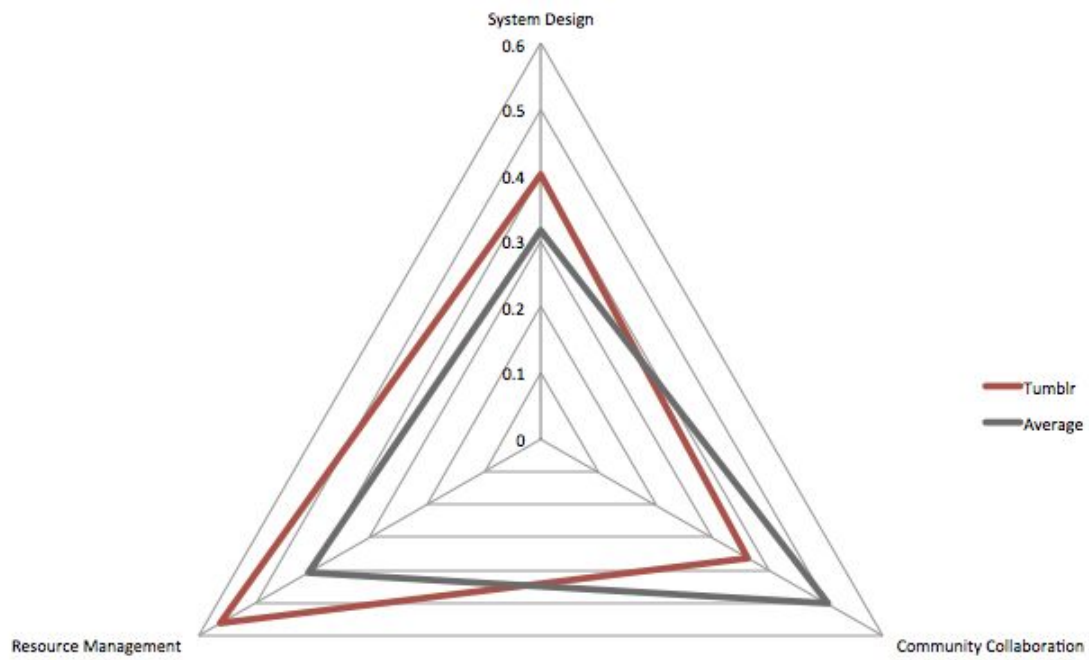
Vine
Vine is a short-form video sharing service where users can share six-second-long looping video clips. Users' videos are published through Vine's social network and can be shared on other services such as Facebook and Twitter.
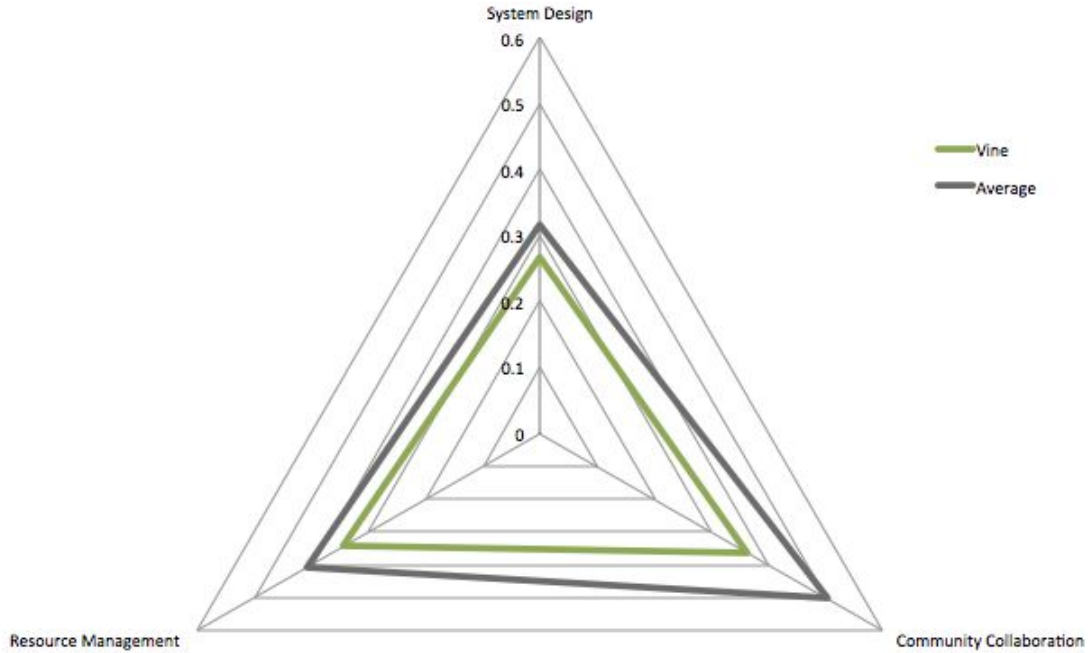
WhatsApp

WhatsApp is a proprietary, cross-platform, encrypted instant messaging client for smartphones.It uses the Internet to send text messages, documents, images, video, user location and audio messages to other users using standard cellular mobile numbers.
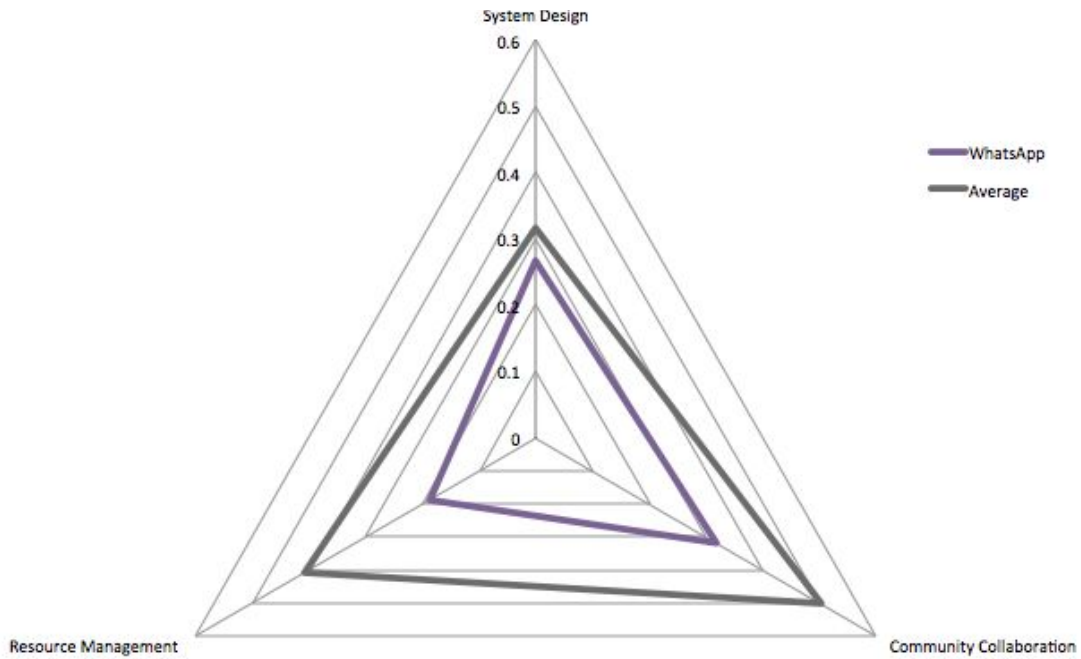
Google+

A social network allowing users to post photos and status updates to the stream or interest based communities, group different types of relationships (rather than simply "friends") into Circles.
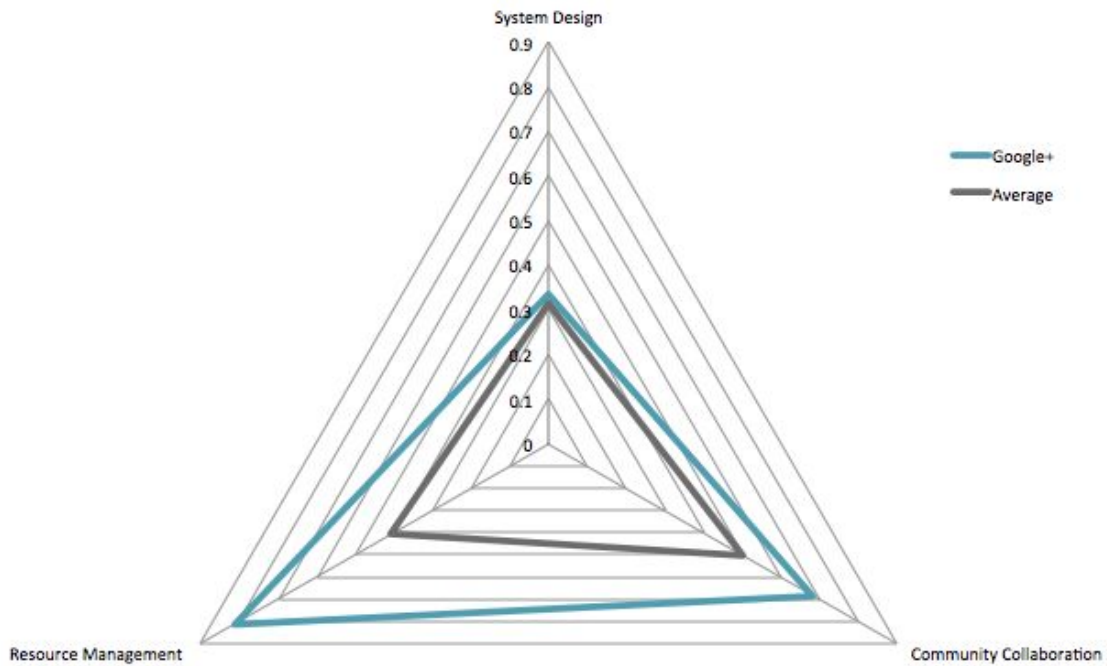
Analysis

The system category receiving the most tools and development effort across all **Social-Media** platforms reviewed were those directed towards **Community Collaboration Tools** with the average system addressing **49.6%** of the assessed features. Sub-elements within this category included:

- Group Tools
- Discussion Tools
- Communication Tools
- User Activity Management Tools

Categories that were afforded the least resources/development efforts across all systems:

- ***Resource Management - 40.6%*** *of the assessed tools and features (resource sharing, storing, categorizing)*
- ***Overall Design (UI/UX) Features - 34.1%*** *of the assessed tools and features (customization of the system to meet specific user needs in relation to user interface features)*

Observation

As the primary function of social media platforms, community sharing, communication, and collaboration are consistently a focal point of most tool and feature development, however resource management is becoming a growing area of development considerations as more communities engage around common sharing, organizing, and annotation of resources such as images, videos, and other media.