

# Survey of Existing CI Systems

We conducted a survey of existing systems on the web, to identify underlying principles. The list of systems is based on the Alexa Top 500 Ranking. Alexa ranks webpages according to a combined measure of page views and unique site views.

The survey tried to find support for the following hypothesized key features of that a CIS could include:

1. **ART:** Can any actor add a new coordination artifact?
2. **CTB:** Can any actor contribute to parts of the coordination artifact of another actor, thus change its state?
3. **LNK:** Are actors able to create system-internal links to connect coordination artifacts?
4. **DSM:** Are state changes of selected artifacts traceable for all actors and/or forwarded to them (via dissemination mechanisms)?
5. **RMD:** Does the system have a user-driven recommender system?
6. **TRK:** Does the system keep track about the usage behavior of a single actor?

## System Evaluation Procedure

The following procedure has been followed to check if a system has the characteristic features. For each feature a manual examination protocol has been developed. If the protocol can be executed successfully, then the system is marked with "1" in the respective feature column of the evaluation table; if not a "0" is entered.

### I. Preparation

1. Identify what could be the dominant conceptual artifact within the system (e.g. article, photo, ...).
2. Create a user account in the system.
  - a. Use a valid email-address.
3. Evaluate:
  - a. If a user account cannot be created: set TRK to "0".

## **II. ART Protocol**

1. Log in to system with user account.
2. Create a new artifact in the system.
  - a. Sometimes the artifact is tied directly to the user account, thus already has been created in conjunction with the user account.
3. Evaluate:
  - a. If new artifact could be created / has been created:
    - i. set ART to "1".
    - ii. Write the identified dominant conceptual artifact into the "Artifact" column.
  - b. If failure: set ART to "0".

## **III. CTB Protocol**

1. Log in to system with user account.
2. Try to comment / rate / manipulate an artifact in the system that is not attached to your user account.
3. Evaluate:
  - a. If one or more of the actions are possible: set CTB to "1".
  - b. If none of the actions is possible: set CTB to "0".

## **IV. LNK Protocol**

1. Log in to system with user account.
2. Try to:
  - link artifacts together (e.g. via links provided by the system).
  - tag artifacts (either use existing ones, or create your own).
3. Evaluate:
  - If one or more of the actions are possible: set LNK to "1".
  - Else: set LNK to "0".

## **V. DSM Protocol**

1. Log in to system with user account.
2. Check if a valid email has been provided to the system.
3. Check if updates / notifications / reports has been activated in the communication / notification preferences.
4. Info: The system may create messages for at least one of the following actions:
  - a) Newly created artifacts.
  - b) Artifacts manipulated by users. (e.g. updated, reviewed, changed).
  - c) Information about activities, that have been performed by other users on artifacts. (liked, commented, shared, endorsed).
  - d) Recommended artifacts or content.

5. Check if email messages have been received with information about actions listed in step (4).
6. Check if the system provides notifications within the client (e.g. webpage, mobile app) about actions listed in step (4).
7. Evaluate:
  - a. If at least one email or client notification has been received regarding one or more of the action subtypes (a – d): set DSM to “1”.
  - b. Else: set DSM to “0”.

## **VI. RMD Protocol**

1. Log in to system with user account.
2. Check if the client of the system provides you with recommended / related content / artifacts. Typically located in a separate panel, section or at the bottom of the page.
3. Check if the system sends you messages containing recommended artifacts or content.
4. Check if the system offers functionality to explore artifacts / content based on your (recent) activities in the system.
5. Evaluate:
  - a. If at least one of the functionality from steps 2 – 4 can be identified: set RMD to “1”.
  - b. Else: set DSM to “0”.

## **TRK Protocol**

1. If no user account can be created: set TRK to “0”.
2. Set TRK to “1” if one or more of the following scenarios apply:
  - a. RMD is “1”.
  - b. System generates messages / triggers about actions that have been performed by other users (V. Step 4. action c).
  - c. System client has an activity feed.
  - d. System provides timeline / history / log of past user activities.
3. Else: set TRK to “0”.

## **Results**

The survey identified 38 systems (32 unique), which meet the above features. Most of them are focused on content sharing (mostly videos) and social networking services.

From the negative identified systems, there were two major groups:

(1) Group 1: Systems that didn't any of the features under survey.

(2) Group 2: Systems that met CTB, DSM and RMD. Mostly these systems comprise platforms that allow users the commenting of edited content (e.g. article on a news portal), whereby the platform recommends users new content based on the previous views and commenting history. An reason, why these systems are popular, may be that content providers, like media outlets, remain full editorial control of the published content, but allow users in a predefined way limited engagement with the content.

## Systems evaluated positive for key CI features

| #  | Name             | Alexa Top 500 Rank | 1. Art | 2. Ctb | 3. Lnk | 4. Dsm | 5. Rmd | 6. Trk | Artifact      | Duplicate | Category    |
|----|------------------|--------------------|--------|--------|--------|--------|--------|--------|---------------|-----------|-------------|
| 1  | facebook.com     | 2                  | 1      | 1      | 1      | 1      | 1      | 1,     | Profile       |           | SNS         |
| 2  | youtube.com      | 3                  | 1      | 1      | 1      | 1      | 1      | 1,     | Video         |           | Content     |
| 3  | wikipedia.com    | 6                  | 1      | 1      | 1      | 1      | 1      | 1,     | Article       |           | Wiki        |
| 4  | linkedin.com     | 10                 | 1      | 1      | 1      | 1      | 1      | 1,     | Profile       |           | SNS         |
| 5  | twitter.com      | 11                 | 1      | 1      | 1      | 1      | 1      | 1,     | Mircoblogline |           | SNS         |
| 6  | blogspot.com     | 12                 | 1      | 1      | 1      | 1      | 1      | 1,     | Blog          |           | Content     |
| 7  | Wordpress.com    | 18                 | 1      | 1      | 1      | 1      | 1      | 1,     | Blog          |           | Content     |
| 8  | vk.com           | 20                 | 1      | 1      | 1      | 1      | 1      | 1,     | Profile       |           | SNS         |
| 9  | ebay.com         | 21                 | 1      | 1      | 1      | 1      | 1      | 1,     | Article       |           | Market      |
| 10 | tumblr.com       | 23                 | 1      | 1      | 1      | 1      | 1      | 1,     | Blogline      |           | Content     |
| 11 | Ask.com          | 27                 | 1      | 1      | 1      | 1      | 1      | 1,     | Question      |           | Knowledge   |
| 12 | pinterest.com    | 32                 | 1      | 1      | 1      | 1      | 1      | 1,     | Pinwall       |           | Content     |
| 13 | xvideos.com      | 37                 | 1      | 1      | 1      | 1      | 1      | 1,     | Video         |           | Content     |
| 14 | weibo.com        | 39                 | 1      | 1      | 1      | 1      | 1      | 1,     | Mircoblogline |           | SNS         |
| 15 | instagram.com    | 42                 | 1      | 1      | 1      | 1      | 1      | 1,     | Photostream   |           | SNS/Content |
| 16 | Blogger.com      | 46                 | 1      | 1      | 1      | 1      | 1      | 1,     | Blog          |           | Content     |
| 17 | xhamster.com     | 52                 | 1      | 1      | 1      | 1      | 1      | 1,     | Video         |           | Content     |
| 18 | Odnoklassniki.ru | 58                 | 1      | 1      | 1      | 1      | 1      | 1,     | Profile       |           | SNS         |
| 19 | ku6.com          | 66                 | 1      | 1      | 1      | 1      | 1      | 1,     | Video         |           | Content     |

## Systems evaluated positive for key CI features

|    |                   |     |   |   |   |   |   |    |                    |               |             |
|----|-------------------|-----|---|---|---|---|---|----|--------------------|---------------|-------------|
| 20 | stackoverflow.com | 68  | 1 | 1 | 1 | 1 | 1 | 1, | Question           |               | Knowledge   |
| 21 | blogspot.in       | 70  | 1 | 1 | 1 | 1 | 1 | 1, | Blog               | blogger.com   | Content     |
| 22 | pornhub.com       | 71  | 1 | 1 | 1 | 1 | 1 | 1, | Video              |               | Content     |
| 23 | imgur.com         | 73  | 1 | 1 | 1 | 1 | 1 | 1, | Photo              |               | Content     |
| 24 | flickr.com        | 75  | 1 | 1 | 1 | 1 | 1 | 1, | Photo              |               | Content     |
| 25 | vube.com          | 76  | 1 | 1 | 1 | 1 | 1 | 1, | Video              |               | Content     |
| 26 | wordpress.com     | 79  | 1 | 1 | 1 | 1 | 1 | 1, | Blog               | wordpress.org | Blog        |
| 27 | thepiratebay.sx   | 80  | 1 | 1 | 1 | 1 | 1 | 1, | P2P URI            |               | Content     |
| 28 | youku.com         | 89  | 1 | 1 | 1 | 1 | 1 | 1, | Video              |               | Content     |
| 29 | ebay.de           | 90  | 1 | 1 | 1 | 1 | 1 | 1, | Article            | ebay.com      | Marketplace |
| 30 | bp.blogspot.com   | 92  | 1 | 1 | 1 | 1 | 1 | 1, | Blog               | blogger.com   | Blog        |
| 31 | dailymotion.com   | 95  | 1 | 1 | 1 | 1 | 1 | 1, | Video              |               | Content     |
| 32 | redtube.com       | 99  | 1 | 1 | 1 | 1 | 1 | 1, | Video              |               | Content     |
| 33 | ebay.de           | 101 | 1 | 1 | 1 | 1 | 1 | 1, | Article            | ebay.com      | Marketplace |
| 34 | youporn.com       | 104 | 1 | 1 | 1 | 1 | 1 | 1, | Video              |               | Content     |
| 35 | reddit.com        | 107 | 1 | 1 | 1 | 1 | 1 | 1, | Story              |               | Content     |
| 36 | sildeshare.com    | 115 | 1 | 1 | 1 | 1 | 1 | 1, | Presentation Slide |               | Content     |
| 37 | blogspot.com.br   | 119 | 1 | 1 | 1 | 1 | 1 | 1, | Blog               | blogger.com   | Blog        |
| 38 | vimeo.com         | 122 | 1 | 1 | 1 | 1 | 1 | 1, | Video              |               | Content     |

## Systems evaluated negative for key CI features

| #  | Name                        | Alexa Top 500 Rank | 1. Art | 2. Ctb | 3. Lnk | 4. Dsm | 5. Rmd | 6. Trk | Duplicate  | Category        |
|----|-----------------------------|--------------------|--------|--------|--------|--------|--------|--------|------------|-----------------|
| 1  | Google.com                  | 1                  | 0      | 0      | 0      | 0      | 0      | 0,     |            | Search          |
| 2  | yahoo.com                   | 4                  | 0      | 0      | 0      | 0      | 0      | 0,     |            | Search          |
| 3  | Baidu.com                   | 5                  | 0      | 0      | 0      | 0      | 0      | 0,     |            | Search          |
| 4  | Amazon.com                  | 7                  | 0      | 1      | 0      | 1      | 1      | 1,     |            | eCommerce       |
| 5  | QQ.com                      | 8                  | 0      | 1      | 0      | 1      | 1      | 0,     |            | News            |
| 6  | Windows Live                | 9                  | 0      | 0      | 0      | 0      | 0      | 0,     |            | Portal          |
| 7  | Taobao                      | 13                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | eCommerce       |
| 8  | Google India                | 14                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 9  | Bing                        | 15                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Search          |
| 10 | Yahoo! Japan                | 16                 | 0      | 0      | 0      | 0      | 0      | 0,     | yahoo.com  | Search          |
| 11 | Yandex                      | 17                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Search          |
| 12 | Sina.com.cn                 | 19                 | 0      | 1      | 0      | 1      | 1      | 0,     |            | News            |
| 13 | Google.de                   | 22                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 14 | MSN.com                     | 24                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | News            |
| 15 | Google.co.uk                | 25                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 16 | googleusercontent.com       | 26                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Misc            |
| 17 | Mail.ru                     | 28                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Email           |
| 18 | google.com.br               | 29                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 19 | 163.com                     | 30                 | 0      | 1      | 0      | 1      | 1      | 0,     |            | Portal          |
| 20 | google.fr                   | 31                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 21 | google.com.hk               | 33                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 22 | hao123.com                  | 34                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Directory       |
| 23 | microsoft.com               | 35                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Website         |
| 24 | google.co.jp                | 36                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 25 | google.ru                   | 38                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 26 | craigslist.com              | 40                 | 1      | 1      | 0      | 0      | 0,     | 0      |            | Classifieds     |
| 27 | paypal.com                  | 41                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Payment         |
| 28 | amazon.co.jp                | 43                 | 0      | 1      | 0      | 1      | 1      | 1,     | amazon.com | eCommerce       |
| 29 | google.it                   | 44                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 30 | The Internet Movie Database | 45                 | 0      | 1      | 0      | 1      | 1      | 0,     |            | Online Database |
| 31 | google.es                   | 47                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 32 | apple.com                   | 48                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Website         |
| 33 | conduit.com                 | 49                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Service         |
| 34 | sohu.com                    | 50                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Portal          |
| 35 | tmall.com                   | 51                 | 0      | 1      | 0      | 0      | 1      | 1,     |            | Website         |
| 36 | fc2.com                     | 53                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Portal          |
| 37 | delta-search.com            | 54                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Search          |
| 38 | adobe.com                   | 55                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Website         |
| 39 | bbc.co.uk                   | 56                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | News            |
| 40 | google.com.mx               | 57                 | 0      | 0      | 0      | 0      | 0      | 0,     | google.com | Search          |
| 41 | akamaihd.com                | 59                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Services        |
| 42 | t.co                        | 60                 | 0      | 0      | 0      | 0      | 0      | 0,     |            | Services        |

## Systems evaluated negative for key CI features

|    |                    |     |   |   |   |   |   |    |            |           |
|----|--------------------|-----|---|---|---|---|---|----|------------|-----------|
| 43 | google.ca          | 61  | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search    |
| 44 | soso.com           | 62  | 0 | 0 | 0 | 0 | 0 | 0, |            | Search    |
| 45 | cnn.com            | 63  | 0 | 0 | 0 | 1 | 0 | 0, |            | News      |
| 46 | amazon.de          | 64  | 0 | 1 | 0 | 1 | 1 | 1, | amazon.cm  | eCommerce |
| 47 | go.com             | 65  | 0 | 0 | 0 | 0 | 0 | 0, |            | Website   |
| 48 | neobux.com         | 67  | 0 | 0 | 0 | 0 | 0 | 1, |            | Ads       |
| 49 | alibaba.com        | 69  | 0 | 0 | 0 | 0 | 0 | 0, |            | eCommerce |
| 50 | ifeng.com          | 72  | 0 | 0 | 0 | 0 | 0 | 0, |            | Website   |
| 51 | babylon.com        | 74  | 0 | 0 | 0 | 0 | 0 | 0, |            | Services  |
| 52 | google.com.tr      | 77  | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search    |
| 53 | adcash.com         | 78  | 0 | 0 | 0 | 0 | 0 | 0, |            | Ads       |
| 54 | 360.cn             | 81  | 0 | 0 | 0 | 0 | 0 | 0, |            | Portal    |
| 55 | huffingtonpost.com | 82  | 0 | 1 | 0 | 1 | 1 | 0, |            | News      |
| 56 | about.com          | 83  | 0 | 0 | 0 | 0 | 0 | 0, |            | Portal    |
| 57 | aol.com            | 84  | 0 | 0 | 0 | 0 | 0 | 0, |            | Portal    |
| 58 | amazon.co.uk       | 85  | 0 | 1 | 0 | 1 | 1 | 1, | amazon.com | eCommerce |
| 59 | google.com.au      | 86  | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search    |
| 60 | avg.com            | 87  | 0 | 0 | 0 | 0 | 0 | 0, |            | Website   |
| 61 | adf.ly             | 88  | 0 | 0 | 0 | 0 | 0 | 0, |            | Ads       |
| 62 | alipay.com         | 91  | 0 | 0 | 0 | 0 | 0 | 0, |            | Payment   |
| 63 | uol.com.br         | 93  | 0 | 1 | 0 | 0 | 1 | 0, |            | Portal    |
| 64 | google.pl          | 94  | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search    |
| 65 | xnxx.com           | 96  | 0 | 0 | 0 | 0 | 0 | 0, |            | Misc      |
| 66 | godaddy.com        | 97  | 0 | 0 | 0 | 0 | 0 | 0, |            | Services  |
| 67 | netflix.com        | 98  | 0 | 0 | 0 | 0 | 1 | 1, |            | Media     |
| 68 | mywebsearch.com    | 100 | 0 | 0 | 0 | 0 | 0 | 0, |            | Misc      |
| 69 | rakuten.co.jp      | 102 | 0 | 0 | 0 | 0 | 0 | 0, |            | eCommerce |
| 70 | cnet.com           | 103 | 0 | 1 | 0 | 0 | 0 | 0, |            | News      |
| 71 | livejasmin.com     | 105 | 0 | 0 | 0 | 0 | 0 | 0, |            | Misc      |
| 72 | globo.com          | 106 | 0 | 1 | 0 | 0 | 0 | 0, |            | Portal    |
| 73 | sogou.com          | 108 | 0 | 0 | 0 | 0 | 0 | 0, |            | Search    |
| 74 | espn.go.com        | 109 | 0 | 0 | 0 | 0 | 0 | 0, |            | News      |
| 75 | dailymail.co.uk    | 110 | 0 | 1 | 0 | 1 | 1 | 0, |            | News      |
| 76 | booking.com        | 111 | 0 | 1 | 0 | 1 | 1 | 0, |            | Services  |
| 77 | buildathome.info   | 112 | 0 | 0 | 0 | 0 | 0 | 0, |            | Misc      |
| 78 | indiatimes.com     | 113 | 0 | 0 | 0 | 1 | 1 | 0, |            | News      |
| 79 | google.com.ar      | 114 | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search    |
| 80 | jd.com             | 116 | 0 | 0 | 0 | 0 | 0 | 0, |            | eCommerce |
| 81 | google.com.sa      | 117 | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search    |
| 82 | google.nl          | 118 | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search    |
| 83 | directrev.com      | 120 | 0 | 0 | 0 | 0 | 0 | 0, |            | Services  |
| 84 | nytimes.com        | 121 | 0 | 1 | 0 | 1 | 1 | 0, |            | News      |
| 85 | weather.com        | 123 | 0 | 0 | 0 | 0 | 0 | 0, |            | Weather   |



## Systems evaluated negative for key CI features

|    |               |     |   |   |   |   |   |    |            |        |
|----|---------------|-----|---|---|---|---|---|----|------------|--------|
| 86 | ameblo.jp     | 124 | 0 | 0 | 0 | 0 | 0 | 0, |            | Portal |
| 87 | google.com.eg | 125 | 0 | 0 | 0 | 0 | 0 | 0, | google.com | Search |