From Trot to Cultural Technology: The Historical Development of Production Networks in Korean Popular Music and Beyond

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DADH2015 – National Taiwan University, Taipei – November 30, 2015
2015 DADH
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MusicBrainz authority records and data

https://musicbrainz.org/artist/e0999c57-4fd5-4639-b7a7-c20bad6110c

2015 DADH

MusicBrainz authority records and data
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Freebase linked entities

http://www.freebase.com/m/02v_j9n
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A “closed” online source: The K-pop Archive

http://k-pop.or.kr/
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Wiki environments (Namu, Generasia)

https://namu.wiki/w/싸이

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Maniadb: An alternative source

http://www.maniadb.com/artist/114807
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Full network available at http://etkspace.scandinavian.ucla.edu/~broadwell/kpop_network

K-pop network from linked data for 1990

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K-pop network from linked data for 1995

Full network available at http://etkspace.scandinavian.ucla.edu/~broadwell/kpop_network
K-pop network from linked data for 2000

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K-pop network from linked data for 2005
K-pop network from linked data for 2010
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K-pop network from linked data for 2015

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Nodes | Artists | Companies
--- | --- | ---
Total (w/dates) | Unique (w/dates) | Total | Unique
MusicBrainz | 3065 (2401) | 1583 (927) | 388 (135) | 323 (72)
Freebase | 2900 (2848) | 621 (621) | 119 (110) | 0 (0)
English DBpedia | 1252 (1235) | 11 (11) | 91 (91) | 2 (2)
Korean DBpedia | 2617 (2533) | 655 (614) | 250 (182) | 140 (81)
All sources | 5249 (4499) | 589 (270) | 0 (0)

Links
- artist->artist: 2122
- group->artist: 2430
- company->artist: 1586
- company->company: 214
J-pop network from linked data for 2015
Top-ranking K-pop artists and companies according to various measurements of network “importance,” as derived from linked-data sources:

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Degree centrality rank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Ens. Jong...</td>
<td>LOEN Ent.</td>
<td>S.M.Ent.</td>
<td>S.M.Ent.</td>
<td>S.M.Ent.</td>
<td>S.M.Ent.</td>
</tr>
<tr>
<td>2</td>
<td>BooHwal</td>
<td>soundTeMP</td>
<td>SidusHQ</td>
<td>LOEN Ent.</td>
<td>LOEN Ent.</td>
<td>LOEN Ent.</td>
</tr>
<tr>
<td>3</td>
<td>위대한 탄생</td>
<td>Ens. Jong...</td>
<td>LOEN Ent.</td>
<td>YG Ent.</td>
<td>YG Ent.</td>
<td>YG Ent.</td>
</tr>
<tr>
<td>4</td>
<td>LOEN Ent.</td>
<td>Two Two</td>
<td>M-Flo</td>
<td>SidusHQ</td>
<td>Mnet Media</td>
<td>JYP Ent.</td>
</tr>
<tr>
<td>5</td>
<td>득국화</td>
<td>BooBooBand</td>
<td>YG Ent.</td>
<td>M-Flo</td>
<td>JYP Ent.</td>
<td>S.I.D-Sound</td>
</tr>
<tr>
<td>6</td>
<td>Sinawe</td>
<td>Seo Taiji &amp; Boys</td>
<td>No Brain</td>
<td>No Brain</td>
<td>SidusHQ</td>
<td>Cube Ent.</td>
</tr>
</tbody>
</table>

| Betweenness centrality rank | | | | | | |
| 1 | LOEN Ent. | LOEN Ent. | LOEN Ent. | LOEN Ent. | LOEN Ent. | LOEN Ent. |
| 2 | BooHwal | CRASH | Universal | S.M.Ent. | Universal | Universal |
| 3 | Sinawe | Seo Taiji & Boys | S.M.Ent. | Universal | Park Jung-hyun | S.M.Ent. |
| 4 | 득국화 | 득국화 | SidusHQ | WOOLLIM Ent. | GMC Records | CJ E&M |
| 5 | Sanullim | kt music | Crazy Ken Band | YB | Mnet Media | Kim, Sang-Woo |
| 6 | kt music | Jungle Ent. | kt music | YG Ent. | Vassilieva | Huckleberry Finn |

| Closeness centrality rank | | | | | | |
| 1 | LOEN Ent. | LOEN Ent. | LOEN Ent. | LOEN Ent. | LOEN Ent. | LOEN Ent. |
| 2 | BooHwal | CRASH | Universal | WOOLLIM Ent. | Universal | INFINITE |
| 3 | Sinawe | 득국화 | Park Jung-hyun | S.M.Ent. | Mnet Media | Universal Music |
| 4 | 득국화 | Jungle Ent. | SK Telecom | Universal | WOOLLIM Ent. | WOOLLIM Ent. |
| 5 | Sanullim | Sanullim | Lee, Seung Chul | Fluxus Music | MBK Ent. | JYP Ent. |
| 6 | Kim, Jong Seo | Lee, Sun Hee | JYP Ent. | Clazziquai Project | Fluxus Music | Apink |

| Eigenvector centrality rank | | | | | | |
| 1 | BooHwal | Two Two | S.M.Ent. | S.M.Ent. | S.M.Ent. | S.M.Ent. |
| 2 | Sinawe | Kim Ji Hoon | SMTOUWN | Shinhwa | Super Junior | Super Junior |
| 3 | Kim, Jong Seo | Hwang Hye-young | Shinhwa | Tohoshinki | Girls’ Generation | EXO |
| 4 | kt music | Oh Ji Hoon | Eric | BoA | Shinhwa | Girls’ Generation |
| 5 | Lee, Seung Chul | Yoo Hyun Jae | S.E.S. | Junjin | SHINee | SHINee |
| 6 | Chae Je Min | Kim Joon | Kim Min-jong | TRAX | Tohoshinki | Shinhwa |
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S.M. Entertainment “cluster” as detected by network analysis software (Cytoscape)
Artists in K-pop and J-pop networks by year, derived from linked-data sources and maniadb
Large J-pop female idol groups organized by Akimoto Yasushi, 1985-2015
Possible next steps

Network analysis
• Incorporate artist, group, genre information
• Dynamic community and role detection
• Add centralization scores, other centrality metrics
• Develop quantitative metrics to compare the development of different “scenes” (e.g., K-indie vs. K-pop)
• Augment network with metadata re: artists’ multimedia output: Examples:
  - Per-song acoustic summaries from AcousticBrains
  - Video thumbnails from YouTube

Digital archives
• Continue to add and link more historical archives
• Advocate for more open access to industry data
Acoustic summary data


2NE1: “I Am the Best” (2011)
Next steps: a macroscope portal?

Sample East Asian studies projects at http://macroscope.cdh.ucla.edu
