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SOURCE (OR PART OF THE FOLLOWING SOURCE):

| | |
|---|---|
| Type | Dissertation |
| Title | Mediated communication and th evolving science system: Mapping the Network Architecture of Knowledge Production |
| Author | A.G. Zelman |
| Faculty | Faculty of Social and Behavioural Sciences |
| Year | 2002 |
| Pages | 276 |
| ISBN | 90.5170.644.8 |

FULL BIBLIOGRAPHIC DETAILS:
http://dare.uva.nl/record/112261

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# Appendix B: Archive of Electronic Communications Analysis

**Appendix B.1** – *Stop-List used for Electronic Analysis*

| | | | | |
|---|---|---|---|---|
| A | EVERYTHING | MOSTLY | THEN | WON'T |
| ABOUT | EVERYWHERE | MR | THENCE | WOULD |
| ABOVE | EXCEPT | MRS | THERE | WOULDN'T |
| ACCORDING | F | MUCH | THEREAFTER | X |
| ACROSS | FEB | MUST | THEREBY | Y |
| ACTUALLY | FEW | MY | THERE'D | YES |
| ADJ | FIFTY | MYSELF | THEREFORE | YET |
| AFTER | FIRST | N | THEREIN | YOU |
| AFTERWARDS | FIVE | NAMELY | THERE'LL | YOU'D |
| AGAIN | FOR | NEITHER | THERE'RE | YOU'LL |
| AGAINST | FORMER | NEVER | THERE'S | YOUR |
| ALL | FORMERLY | NEVERTHELESS | THEREUPON | YOU'RE |
| ALMOST | FORTY | NINE | THERE'VE | YOURS |
| ALONE | FOUND | NINETY | THESE | YOURSELF |
| ALONG | FOUR | NO | THEY | YOURSELVES |
| ALREADY | FRI | NOBODY | THEY'D | YOU'VE |
| ALSO | FROM | NONE | THEY'LL | Z |
| ALTHOUGH | FROM | NONETHELESS | THEY'RE | |
| ALWAYS | FURTHER | NOONE | THEY'VE | |
| AM | G | NOR | THIRTY | |
| AMONG | H | NOT | THIS | |
| AMONGST | HAD | NOTHING | THOSE | |
| AN | HAS | NOV | THOUGH | |
| AND | HASN'T | NOW | THOUSAND | |
| ANOTHER | HAVE | NOWHERE | THREE | |
| ANY | HAVEN'T | O | THROUGH | |
| ANYHOW | HE | OCT | THROUGHOUT | |
| ANYONE | HE'D | OF | THRU | |
| ANYTHING | HE'LL | OFF | THU | |
| ANYWHERE | HENCE | OFTEN | THUS | |
| APR | HER | ON | TO | |
| ARE | HERE | ONCE | TOGETHER | |
| AREN'T | HEREAFTER | ONE | TOO | |
| AROUND | HEREBY | ONE'S | TOWARD | |
| AS | HEREIN | ONLY | TOWARDS | |
| AT | HERES | ONTO | TRILLION | |
| AUG | HEREUPON | OR | TUE | |
| B | HERS | OTHER | TWENTY | |
| BE | HERSELF | OTHERS | TWO | |
| BECAME | HE'S | OTHERWISE | U | |
| BECAUSE | HIM | OUR | UNDER | |
| BECOME | HIMSELF | OURS | UNLESS | |
| BECOMES | HIS | OURSELVES | UNLIKE | |
| BECOMING | HOW | OUT | ÚNLIKELY | |
| BEEN | HOWEVER | OVER | UNTIL | |
| BEFORE | HUNDRED | OVERALL | UP | |
| BEFOREHAND | I | OWN | UPON | |
| BEGIN | I'D | P | USE | |
| BEGINNING | IE | PER | USED | |
| BEHIND | IF | PERHAPS | USING | |
| BEING | I'LL | Q | V | |

| | | | |
|---|---|---|---|
| BELOW | I'M | R | VERY |
| BESIDE | IN | RATHER | VIA |
| BESIDES | INC. | RECENT | W |
| BETWEEN | INDEED | RECENTLY | WAS |
| BEYOND | INSTEAD | S | WASN'T |
| BILLION | INTO | SAME | WE |
| BOTH | IS | SAT | WED |
| BUT | ISN'T | SEEM | WE'D |
| BY | IT | SEEMED | WELL |
| C | ITS | SEEMING | WE'LL |
| CAN | IT'S | SEEMS | WERE |
| CANNOT | ITSELF | SEP | WE'RE |
| CAN'T | I'VE | SEVEN | WEREN'T |
| CAPTION | J | SEVENTY | WE'VE |
| CO | JAN | SEVERAL | WHAT |
| CO. | JUL | SHE | WHATEVER |
| COULD | JUN | SHE'D | WHAT'LL |
| COULDN'T | K | SHE'LL | WHAT'S |
| D | L | SHE'S | WHAT'VE |
| DE | LAST | SHOULD | WHEN |
| DEC | LATER | SHOULDN'T | WHENCE |
| DID | LATTER | SINCE | WHENEVER |
| DIDN'T | LATTERLY | SIX | WHERE |
| DO | LEAST | SIXTY | WHERAFTER |
| DOES | LESS | SO | WHEREAS |
| DOESN'T | LET | SOME | WHEREBY |
| DON'T | LET'S | SOMEBODY | WHEREIN |
| DOWN | LIKE | SOMEONE | WHERE'S |
| DST | LIKELY | SOMETHING | WHEREUPON |
| DU | LTD | SOMETIME | WHEREVER |
| DURING | M | SOMETIMES | WHETHER |
| E | MADE | SOMEWHERE | WHICH |
| EACH | MAKE | STILL | WHILE |
| EET | MAKES | STOP | WHITHER |
| EG | MANY | SUCH | WHO |
| EIGHT | MAR | SUN | WHO'D |
| EIGHTY | MAY | T | WHOEVER |
| EITHER | MAYBE | TAKING | WHOLE |
| ELSE | ME | TEN | WHO'LL |
| ELSEWHERE | MEANTIME | THAN | WHOM |
| END | MEANWHILE | THAT | WHOMEVER |
| ENDING | MIGHT | THAT'LL | WHO'S |
| ENOUGH | MILLION | THAT'S | WHOSE |
| ETC | MISS | THAT'VE | WHY |
| EVEN | MON | THE | WILL |
| EVER | MORE | THEIR | WITH |
| EVERY | MOREOVER | THEM | WITHIN |
| EVERYONE | MOST | THEMSELVES | WITHOUT |

**Appendix B.2** – *Texts Used in Electronic Analysis*

| Name | Dates | # Emails | KB | Word Occurrences | Unique Words | Unique Word % | Mean Ratio % |
|---|---|---|---|---|---|---|---|
| **E1.txt** | 10/97 – 05/98 | 350 | 807 | 120113 | 3604 | 2.88 | 54.29 |
| **E2.txt** | 06/98 – 12/98 | 357 | 980 | 140125 | 4498 | 3.21 | 58.61 |
| **E3.txt** | 01/99 – 07/99 | 293 | 660 | 97552 | 3247 | 3.33 | 57.09 |
| **E4.txt** | 08/99 – 12/99 | 261 | 991 | 142228 | 4859 | 3.42 | 60.14 |
| **All.txt** | 10/97 – 12/99 | 1261 | 3438 | 500183 | 9679 | 1.94 | 57.67 |

**Appendix B.3** – *EuroCon-Knowflow (SOEIS) Member & Associates List* [10]

| | | | | | |
|---|---|---|---|---|---|
| **1** | J.W. Abraham | **26** | Koen Frenken | **51** | Juergen Roth * |
| **2** | Isidro F. Aguillo | **27** | *Christian Fuchs* | **52** | Beatriz Ruivo |
| **3** | Petra Ahrweiler * | **28** | Yuko Fujigaki | **53** | **Christian Salzmann** |
| **4** | James Amend | **29** | Nigel Gilbert * | **54** | Luis Sanz-Menendez |
| **5** | *Ben Andrews* | **30** | Henk Goorhuis * | **55** | *Frank Sbresny* |
| **6** | Sveva Avveduto | **31** | Heide Hackmann | **56** | Andrea Scharnhorst |
| **7** | Katalin Balazs | **32** | Takayuki Hayashi | **57** | Helmut Schauer |
| **8** | Paolo Barbesino | **33** | Peter Healey | **58** | Christof Schiene |
| **9** | Kate Barker | **34** | Gaston Heimeriks * | **59** | *Corinna Schlombs* |
| **10** | Andrea Belliger | **35** | Philippe Hert | **60** | Eric Schwarz |
| **11** | Peter Van Den Besselaar * | **36** | Wolfgang Hofkirchner | **61** | *Efisio Serra* |
| **12** | Lucio Biggiero * | **37** | Annamaria Inzelt | **62** | Masashi Shirabe |
| **13** | **Gertrude Blauwhof** | **38** | David Krieger * | **63** | Beatrice Sigrist * |
| **14** | Manfred Bonitz | **39** | Janis Kristapsons | **64** | Daniel Stoller-Schai |
| **15** | Moses Boudourides * | **40** | Guenter Kueppers * | **65** | Edwina Taborsky |
| **16** | *Alex Coltro* | **41** | Loet Leydesdorff * | **66** | *Laure Thomas* |
| **17** | Michele Courant | **42** | Sinisa Maricic | **67** | Jesus Vega |
| **18** | Alcino Couto | **43** | **Michael Murtaugh** | **68** | Costas Vorlow |
| **19** | *Abel Covarrubias* | **44** | *Sabine Paul* | **69** | Caroline Wagner |
| **20** | *Ireneu Dias* | **45** | *Meier Peter* | **70** | Gerald Wagner |
| **21** | Vinck Dominique | **46** | Lars Qvortrup | **71** | Shyh-Rong Wang |
| **22** | Simon Dresner * | **47** | Aura Reggiani * | **72** | Connie Wilson |
| **23** | Henry Etzkowitz | **48** | Marta Riba * | **73** | Gerard De Zeeuw * |
| **24** | *Charles Evans* | **49** | *Carlos Rodrigues* | **74** | Andrés Zelman |
| **25** | Peter Fleissner | **50** | *T Rogers* | | |

[10] *Italics* = Joined later, **Bold** = No longer in list, * = SOEIS-Core (15), Total Members = 74.

**Appendix B.4** – *Top 50 Keywords in Electronic Consistency Analysis*

| WORD | FILES | TOTAL | E1 | E2 | E3 | E4 |
|---|---|---|---|---|---|---|
| SYSTEM | 4 | 1738 | 397 | 446 | 621 | 274 |
| UNIVERSITY | 4 | 1632 | 291 | 556 | 263 | 522 |
| SYSTEMS | 4 | 1591 | 417 | 379 | 370 | 425 |
| **INFORMATION** | **4** | **1560** | **381** | **478** | **278** | **423** |
| **RESEARCH** | **4** | **1443** | **451** | **328** | **304** | **360** |
| SELF | 4 | 1335 | 531 | 331 | 277 | 196 |
| SOCIAL | 4 | 1225 | 266 | 253 | 338 | 368 |
| SCIENCE | 4 | 1188 | 251 | 266 | 334 | 337 |
| **CONFERENCE** | **4** | **1169** | **172** | **356** | **214** | **427** |
| NEW | 4 | 1036 | 282 | 261 | 175 | 318 |
| **KNOWLEDGE** | **4** | **836** | **346** | **137** | **122** | **231** |
| **PROJECT** | **4** | **818** | **406** | **141** | **157** | **114** |
| **ORGANIZATION** | **4** | **808** | **314** | **190** | **150** | **154** |
| SOCIETY | 4 | 783 | 155 | 164 | 183 | 281 |
| LOET | 4 | 782 | 279 | 176 | 224 | 103 |
| TECHNOLOGY | 4 | 732 | 145 | 177 | 109 | 301 |
| PAPERS | 4 | 698 | 131 | 224 | 122 | 221 |
| **MEETING** | **4** | **659** | **274** | **184** | **160** | **41** |
| EUROPEAN | 4 | 656 | 263 | 127 | 122 | 144 |
| THEORY | 4 | 651 | 173 | 197 | 145 | 136 |
| COMMUNICATION | 4 | 638 | 221 | 156 | 172 | 89 |
| **TASK** | **4** | **617** | **387** | **90** | **93** | **47** |
| RE | 4 | 610 | 178 | 156 | 164 | 112 |
| WORK | 4 | 598 | 170 | 135 | 139 | 154 |
| ORDER | 4 | 586 | 176 | 91 | 122 | 197 |
| WORLD | 4 | 561 | 53 | 138 | 134 | 236 |
| DEAR | 4 | 554 | 166 | 140 | 174 | 74 |
| DIFFERENT | 4 | 539 | 109 | 155 | 168 | 107 |
| LEYDESDORFF | 4 | 527 | 249 | 126 | 98 | 54 |
| TIME | 4 | 523 | 107 | 157 | 87 | 172 |
| **POLICY** | **4** | **522** | **202** | **54** | **135** | **131** |
| PLEASE | 4 | 521 | 108 | 166 | 124 | 123 |
| COMPLEX | 4 | 502 | 131 | 179 | 59 | 133 |
| PETER | 4 | 493 | 186 | 135 | 90 | 82 |
| **NETWORKS** | **4** | **490** | **316** | **80** | **50** | **44** |
| DATA | 4 | 462 | 222 | 139 | 43 | 58 |
| INTERNATIONAL | 4 | 441 | 57 | 106 | 103 | 175 |
| DYNAMICS | 4 | 441 | 163 | 128 | 53 | 97 |
| PAPER | 4 | 437 | 95 | 161 | 76 | 105 |
| BASED | 4 | 426 | 126 | 86 | 78 | 136 |
| HUMAN | 4 | 424 | 31 | 112 | 113 | 168 |
| SEE | 4 | 423 | 85 | 145 | 80 | 113 |
| KIND | 4 | 422 | 122 | 112 | 110 | 78 |
| DEVELOPMENT | 4 | 402 | 107 | 102 | 67 | 126 |
| MANAGEMENT | 4 | 401 | 86 | 111 | 69 | 135 |

| | | | | | | |
|---|---|---|---|---|---|---|
| NETWORK | 4 | 399 | 211 | 71 | 63 | 54 |
| MAIL | 4 | 398 | 83 | 116 | 80 | 119 |
| SCIENTIFIC | 4 | 389 | 106 | 86 | 97 | 100 |
| HENK | 4 | 388 | 99 | 92 | 137 | 60 |
| RESULTS | 4 | 384 | 115 | 95 | 98 | 76 |

**Appendix B.5** – *Top Keywords in Electronic x All Analysis*

| E1xEall | FREQ. | E2xEall | FREQ. | E3xEall | FREQ. | E4xEall | FREQ. |
|---|---|---|---|---|---|---|---|
| *AGENT* | *10* | ***AGREEMENT*** | *5* | AGENT | 76 | ***AMSTERDAM*** | *23* |
| *AGENTS* | *10* | ***BIELEFELD*** | *26* | **AGREEMENT** | **69** | ***BIELEFELD*** | *5* |
| AHRWEILER | 41 | *ECONOMIC* | *39* | ***ANALYSIS*** | *33* | *CH* | *13* |
| **AMSTERDAM** | **153** | **EVOLUTIONARY** | **200** | APRIL | 68 | *CLOSURE* | *8* |
| **ANALYSIS** | **155** | FILM | 56 | BILBAO | 27 | *COMMUNICATION* | *89* |
| ANNEX | 65 | GENETIC | 97 | BST | 81 | CYBER | 49 |
| BIELEFELD | 215 | ***INDUSTRIAL*** | *14* | CLOSED | 71 | DATA | *58* |
| *CONFERENCE* | *172* | *INNOVATION* | *39* | CLOSURE | 64 | *DATE* | *21* |
| *CULTURE* | *10* | ***KNOWLEDGE*** | *137* | *COMPUTER* | *28* | *DEAR* | *74* |
| **DATA** | **222** | *ORDER* | *91* | DATA | *43* | *DUTH* | *3* |
| DELIVERABLE | 35 | *POLICY* | *54* | DEAR | 174 | *EMERGENCE* | *20* |
| DISSEMINATION | 46 | ***PROJECT*** | *141* | DIFFERENT | 168 | *EMPIRICAL* | *20* |
| DISTRICTS | 63 | *RELEVANCE* | *10* | ENVIRONMENT | 123 | *ENTROPY* | *3* |
| DISTRICTUAL | 32 | RORTY | 68 | ***EVOLUTIONARY*** | *14* | *IDENTITY* | *29* |
| DUTH | 54 | SEPT | 52 | HENK | 137 | *KRIEGER* | *3* |
| EMERGING | 74 | ***TASK*** | *90* | *HISTORY* | *13* | LANDSCAPE | 44 |
| ENDOWMENT | 41 | | | KOBE | 23 | *LEYDESDORFF* | *54* |
| ENTREPRENEURIA+ | 63 | | | LOET | 224 | *LOET* | *103* |
| ENTREPRENEURS | 60 | | | MANUFACTURING | 42 | ***MEANING*** | *27* |
| ENTREPRENEURSH+ | 53 | | | **MEANING** | **158** | *MEETING* | *41* |
| EU | 90 | | | *MODELS* | *28* | *MET* | *4* |
| EUROPEAN | 263 | | | OPERATIONALLY | 54 | *MOSES* | *11* |
| *FAX* | *30* | | | PERCENTAGE | 163 | ***NETWORK*** | *54* |
| FIRM | 41 | | | PROBLEMS | 94 | ***NETWORKS*** | *44* |
| FUJIGAKI | 57 | | | *PROPOSAL* | *3* | *NIGEL* | *5* |
| GILBERT | 51 | | | PUBLIC | 148 | *NL* | *16* |
| GREECE | 56 | | | RELEVANCE | 73 | PHOTONS | 42 |
| GUENTER | 115 | | | *RESOURCES* | *14* | ***PROJECT*** | *114* |
| *HISTORY* | *17* | | | SCIENCE | 334 | *REGARDS* | *49* |
| *HUMAN* | *31* | | | SOCIAL | 338 | *REMOTE* | *5* |
| **INDUSTRIAL** | **86** | | | *SPSG* | *35* | RIGHTS | 50 |
| INTERVIEWS | 39 | | | STATEMENTS | 38 | *SELF* | *196* |
| **KNOWLEDGE** | **346** | | | **SYSTEM** | **621** | *SURREY* | *3* |
| KUEPPERS | 78 | | | TRANSDISCIPLIN+ | 58 | *SWITZERLAND* | *6* |
| LARS | 32 | | | UNDERSTANDING | 139 | SYMPOSIUM | 97 |
| LEYDESDORFF | 249 | | | | | ***SYSTEM*** | *274* |
| LOET | 279 | | | | | ***TASK*** | *47* |
| MEETING | 274 | | | | | *TASKS* | *8* |
| MET | 128 | | | | | TECHNOLOGY | 301 |
| MONTHS | 60 | | | | | ***THEORETICAL*** | *34* |
| **NETWORK** | **211** | | | | | TOULOUSE | 36 |
| **NETWORKS** | **316** | | | | | TRADE | 57 |
| NIGEL | 65 | | | | | *UNI* | *3* |
| NL | 173 | | | | | UNIVERSITÄT | 46 |
| NONAKA | 32 | | | | | *UVA* | *14* |
| ORGANIZATION | 314 | | | | | WORLD | 236 |
| ORGANIZATIONAL | 90 | | | | | WTO | 75 |
| ORGANIZING | 114 | | | | | | |
| PARTNERS | 57 | | | | | | |
| PETER | 186 | | | | | | |

| | |
|---|---|
| PETRA | 68 |
| POLICY | 202 |
| *POLITICAL* | *16* |
| **PROJECT** | **406** |
| PROPOSAL | 73 |
| *PUBLIC* | *45* |
| REMOTE | 88 |
| RESOURCES | 159 |
| RTD | 80 |
| SELF | 531 |
| STI | 63 |
| SUB | 64 |
| SURREY | 52 |
| **TASK** | **387** |
| TASKS | 122 |
| **THEORETICAL** | **144** |
| TSER | 39 |
| UNI | 52 |
| UVA | 159 |
| WORKPACKAGE | 73 |
| *WORLD* | *53* |
| WP | 30 |
| YUKO | 44 |

**Appendix B.6** – *Top Keywords in Electronic x Each Analysis*

| E1xE2 | FREQ. | E2xE3 | FREQ. | E3xE4 | FREQ. |
|---|---|---|---|---|---|
| *AGENTS* | *10* | *AGENCY* | *5* | ACTOR | 14 |
| AHRWEILER | 41 | *AGREEMENT* | *5* | ACTORS | 36 |
| AIM | 39 | ALGORITHMS | 52 | AGENT | 76 |
| AMSTERDAM | 153 | ANALYSIS | 120 | AGENTS | 83 |
| ANNEX | 65 | *APRIL* | *28* | APRIL | 68 |
| ANT | 21 | AUTOMATA | 37 | BIELEFELD | 28 |
| AUTONOMY | 24 | *AUTOPOIETIC* | *8* | BILBAO | 27 |
| BEATRICE | 33 | BIOLOGY | 67 | BST | 81 |
| BIELEFELD | 215 | BOOK | 92 | CH | 65 |
| BOUNDARY | 26 | CELLULAR | 52 | *CHAIR* | *24* |
| BUDGET | 25 | CHAT | 24 | CHEM | 41 |
| COMMISSION | 28 | *CHEM* | *12* | CLOSED | 71 |
| COMMITMENT | 21 | *CLOSURE* | *19* | CLOSURE | 64 |
| CONDUCTED | 22 | *COMMUNICATIONS* | *12* | COMMUNICATION | 172 |
| *CONFERENCE* | *172* | COMPLEX | 179 | COMMUNICATIVE | 25 |
| *CULTURE* | *10* | COMPUTATION | 69 | *COMPUTER* | *28* |
| **DATA** | **222** | **DATA** | **139** | CONSTRUCTIVIST | 16 |
| DELIVERABLE | 35 | *DEAR* | *140* | COUPLING | 27 |
| DESIGNS | 27 | DER | 67 | *CYBER* | *4* |
| DIMENSION | 45 | DETERMINISTIC | 23 | CYBERCONFERENC+ | 19 |
| DIS | 17 | DIGITAL | 47 | DEAR | 174 |
| DISSEMINATION | 46 | EIGEN | 32 | DIFFERENT | 168 |
| DISTRICT | 23 | *ENVIRONMENT* | *82* | DISTINCTION | 46 |
| DISTRICTS | 63 | EVOLUTION | 162 | DONOSTIA | 20 |
| DISTRICTUAL | 32 | **EVOLUTIONARY** | **200** | DURHAM | 15 |
| *ECOLOGY* | *4* | FILM | 56 | EMPIRICAL | 58 |
| EDUCATIONAL | 42 | GENETIC | 97 | ENTROPY | 35 |
| ELEMENTS | 56 | HEARING | 39 | ***EVOLUTIONARY*** | ***14*** |
| EMERGING | 74 | *HENK* | *92* | EXIST | 41 |
| ENDOWMENT | 41 | **HISTORY** | **106** | GMT | 59 |
| ENTREPRENEURIA+ | 63 | *IDENTITY* | *35* | GOORHUIS | 79 |
| ENTREPRENEURS | 60 | ILLIGAL | 23 | GREETINGS | 23 |
| ENTREPRENEURSH+ | 53 | ***INNOVATION*** | ***39*** | HENK | 137 |
| EU | 90 | ***INTEGRATION*** | ***17*** | ***HISTORY*** | ***13*** |
| EUROCON | 25 | KDD | 26 | IDENTITIES | 20 |
| EUROPEAN | 263 | *LOET* | *176* | IDENTITY | 89 |
| ***EVOLUTIONARY*** | ***80*** | *MANUFACTURING* | *6* | INSTITUTES | 14 |
| FALSE | 26 | MEANING | *71* | **INTEGRATION** | **53** |
| FEMALE | 24 | MET | 56 | INTEND | 19 |
| FIRM | 41 | MINING | 40 | *INTERESTS* | *6* |
| FIRMS | 38 | MODELS | 143 | JAPAN | 57 |
| FRAMEWORK | 65 | *MODES* | *4* | KIND | 110 |
| FUJIGAKI | 57 | MOLECULAR | 41 | KOBE | 23 |
| GERALD | 16 | *MONETARY* | *3* | KOSOVO | 17 |
| GILBERT | 51 | NEUCHATEL | 36 | KRIEGER | 30 |
| GOVERNMENT | 72 | NUCLEAR | 27 | **LEYDESDORFF** | **98** |
| GREECE | 56 | ONLINE | 70 | *LIGHT* | *5* |
| GUENTER | 115 | *OPERATIONS* | *18* | *LIVING* | *9* |
| ***HISTORY*** | ***17*** | PHILOSOPHICAL | 30 | LOET | 224 |
| *HUMAN* | *31* | PHILOSOPHY | 66 | LUCIO | 44 |

| | | | | | |
|---|---|---|---|---|---|
| IDENTITY | 103 | *POLICY* | *54* | LUNCH | 42 |
| INDUSTRIAL | 86 | *PROBLEMS* | *50* | **MEANING** | **158** |
| INDUSTRY | 86 | PROGRAM | 101 | **MEETING** | **160** |
| **INNOVATION** | **138** | *PUBLIC* | *69* | MEME | 15 |
| **INTEGRATION** | **57** | *RELEVANCE* | *10* | MIKEL | 14 |
| INTERVIEWS | 39 | *ROME* | *4* | NL | 78 |
| *INVITED* | *14* | RORTY | 68 | OPERATIONALLY | 54 |
| IWT | 17 | *SCIENCE* | *266* | OPTION | 24 |
| KNOWFLOW | 22 | SEPT | 52 | PERCENTAGE | 163 |
| KNOWLEDGE | 346 | SEPTEMBER | 89 | PRICING | 25 |
| KRIEGER | 50 | SESSION | 137 | PROBLEMS | 94 |
| KUEPPERS | 78 | *SOCIAL* | *253* | **PROJECT** | **157** |
| LARS | 32 | *SOIS* | *3* | *PROPOSALS* | *10* |
| **LEYDESDORFF** | **249** | *SPSG* | *9* | QUESTIONAIR | 14 |
| LOET | 279 | SYMBOLIC | 32 | RADICAL | 33 |
| MALE | 17 | *SYSTEM* | *446* | RE | 164 |
| **MEETING** | **274** | TOFTS | 26 | REGARDS | 84 |
| MET | 128 | *TRANSDISCIPLIN+* | *6* | REMINDINGS | 16 |
| *MINING* | *3* | ***UNDERSTANDING*** | ***73*** | ROME | 41 |
| *MOLECULAR* | *4* | UNIVERSITY | 556 | SELF | 277 |
| MONEY | 37 | | | *SPECIES* | *4* |
| MONTHS | 60 | | | SPSG | 35 |
| NATIONAL | 142 | | | STATEMENTS | 38 |
| NETWORK | 211 | | | SUBSYSTEMS | 32 |
| NETWORKS | 316 | | | *SYMPOSIUM* | *20* |
| NEWMETROPOLIS | 27 | | | SYSTEM | 621 |
| NIGEL | 65 | | | **TASK** | **93** |
| NIJKAMP | 17 | | | TASKS | 34 |
| NISTEP | 25 | | | *TECHNOLOGY* | *109* |
| NL | 173 | | | *TRADE* | *6* |
| NONAKA | 32 | | | TRANSDISCIPLIN+ | 58 |
| OBJECTIVES | 31 | | | UNCERTAINTY | 44 |
| *ONLINE* | *9* | | | **UNDERSTANDING** | **139** |
| ORDER | 176 | | | UNIV | 16 |
| ORGANIZATION | 314 | | | UNIZH | 32 |
| ORGANIZATIONAL | 90 | | | UVA | 72 |
| ORGANIZATIONS | 82 | | | WB | 29 |
| ORGANIZING | 114 | | | WELLCOME | 15 |
| *PARTICULAR* | *33* | | | *YORK* | *4* |
| PARTNER | 23 | | | | |
| PARTNERS | 57 | | | | |
| PETRA | 68 | | | | |
| *PHILOSOPHY* | *9* | | | | |
| PING | 22 | | | | |
| POLICIES | 58 | | | | |
| POLICY | 202 | | | | |
| PRECONDITIONS | 23 | | | | |
| PROGRAMMES | 20 | | | | |
| **PROJECT** | **406** | | | | |
| PROPOSAL | 73 | | | | |
| RELATEDNESS | 22 | | | | |
| RELATING | 16 | | | | |
| RESEARCH | 451 | | | | |

| | |
|---|---|
| RESOURCES | 159 |
| RESPONDENTS | 19 |
| *REVIEWED* | *5* |
| REWRITE | 17 |
| RISK | 54 |
| ROME | 32 |
| *RORTY* | *5* |
| ROTH | 21 |
| RTD | 80 |
| SELF | 531 |
| *SESSION* | *41* |
| SIGRIST | 23 |
| SOC | 20 |
| STI | 63 |
| STRATEGIC | 26 |
| STUDY | 113 |
| SUB | 64 |
| SURREY | 52 |
| **TASK** | **387** |
| TASKS | 122 |
| TEAM | 37 |
| TECHNIQUE | 23 |
| THEORETICAL | 144 |
| TRANSFER | 28 |
| *TRUTH* | *8* |
| TSER | 39 |
| *UNIVERSITY* | *291* |
| UVA | 159 |
| WOMEN | 23 |
| WORKPACKAGE | 73 |
| *WORLD* | *53* |
| WP | 30 |
| YUKO | 44 |

**Appendix B.7** – *Collocate Analysis: Figure 1 -> Evolutionary*

## Distribution of 'Evolutionary'

| N | File | Words | Hits | per 1,000 | Plot |
|---|---|---|---|---|---|
| 1 | e1.txt | 117,595 | 80 | 0.68 | |
| 2 | e2.txt | 137,822 | 200 | 1.45 | |
| 3 | e3.txt | 96,062 | 14 | 0.15 | |
| 4 | e4.txt | 140,894 | 82 | 0.58 | |

## Keyword: Evolutionary

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **EVOLUTIONARY** | 414 | 19 | 19 |
| COMPUTATION | 89 | 7 | 82 |
| GENETIC | 35 | 19 | 16 |
| THEORY | 30 | 2 | 28 |
| ECONOMICS | 28 | 4 | 24 |
| *SYSTEMS* | *27* | *7* | *20* |
| BIOLOGY | 25 | 3 | 22 |
| PROGRAMMING | 25 | 6 | 19 |
| EVOLUTION | 24 | 11 | 13 |
| ALGORITHMS | 21 | 5 | 16 |
| UNIVERSITY | 21 | 9 | 12 |
| MODEL | 20 | 1 | 19 |
| *NEURAL* | *19* | *10* | *9* |
| CONFERENCE | 16 | 9 | 7 |
| PROCESS | 16 | 4 | 12 |
| DESIGN | 14 | 1 | 13 |
| MODELS | 14 | 6 | 8 |
| ECOLOGY | 13 | 7 | 6 |
| DEVELOPMENT | 12 | 7 | 5 |
| EUROPEAN | 12 | 8 | 4 |
| FIRST | 12 | 6 | 6 |
| NETWORKS | 12 | 8 | 4 |
| PAPERS | 12 | 11 | 1 |
| ARTIFICIAL | 10 | 6 | 4 |
| CO | 10 | 7 | 3 |
| JOURNAL | 10 | 5 | 5 |
| STRATEGIES | 10 | 4 | 6 |
| LEARNING | 9 | 4 | 5 |

## Keywords: Evolutionary x Systems

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **EVOLUTIONARY** | 28 | 1 | 2 |
| *SYSTEMS* | *27* | *7* | *20* |
| CO | 6 | 3 | 3 |
| EVOLUTION | 6 | 3 | 3 |
| FUZZY | 5 | 2 | 3 |
| NEURAL | 5 | 4 | 1 |

## Keywords: Evolutionary x Neural

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **EVOLUTIONARY** | 26 | 5 | 2 |
| *NEURAL* | *19* | *10* | *9* |
| PROGRAMMING | 12 | 6 | 6 |
| NETWORKS | 11 | 8 | 3 |
| EVOLUTION | 9 | 3 | 6 |
| CO | 6 | 3 | 3 |
| GENETIC | 6 | 6 | 0 |
| ARTIFICIAL | 5 | 1 | 4 |
| SYSTEMS | 5 | 1 | 4 |

## Appendix B.8 – *Collocate Analysis: Figure 2 -> Meaning*

### Distribution of 'Meaning'

| N | File | Words | Hits | per 1,000 |
|---|---|---|---|---|
| 1 | e1.txt | 117,584 | 30 | 0.26 |
| 2 | e2.txt | 137,812 | 71 | 0.52 |
| 3 | e3.txt | 96,063 | 158 | 1.64 |
| 4 | e4.txt | 140,889 | 27 | 0.19 |

Plot

### Keyword: Meaning

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| MEANING | 332 | 14 | 32 |
| *INFORMATION* | *44* | *29* | *15* |
| SYSTEM | 42 | 19 | 23 |
| UNCERTAINTY | 28 | 19 | 9 |
| LOET | 26 | 9 | 17 |
| SYSTEMS | 21 | 6 | 15 |
| PROVIDED | 19 | 10 | 9 |
| *WORDS* | *16* | *0* | *16* |
| PROVIDING | 14 | 12 | 2 |
| SELF | 14 | 10 | 4 |
| ABOUT | 13 | 10 | 3 |
| HENK | 12 | 4 | 8 |
| LEYDESDORFF | 12 | 0 | 12 |
| PETER | 12 | 7 | 5 |
| PREVIOUS | 10 | 8 | 2 |
| SOCIAL | 10 | 5 | 5 |
| TERMS | 10 | 7 | 3 |
| THERE | 10 | 5 | 5 |
| DIFFERENT | 9 | 6 | 3 |

## Keyword: Meaning x Information

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **MEANING** | 43 | 2 | 5 |
| *INFORMATION* | *40* | *28* | *12* |

## Keyword: Meaning x Words

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **MEANING** | 16 | 0 | 0 |
| *WORDS* | *16* | *0* | *16* |
| HENK | 10 | 4 | 6 |
| LOET | 8 | 3 | 5 |
| PETER | 7 | 4 | 3 |
| GOORHUIS | 6 | 0 | 6 |
| LEYDESDORFF | 5 | 0 | 5 |

## Appendix B.9 – *Collocate Analysis: Figure 3 -> Project*

### Distribution of 'Project'

| N | File | Words | Hits | per 1,000 | Plot |
|---|---|---|---|---|---|
| 1 | e1.txt | 117,599 | 409 | 3.48 | |
| 2 | e2.txt | 137,817 | 141 | 1.02 | |
| 3 | e3.txt | 96,069 | 157 | 1.63 | |
| 4 | e4.txt | 140,895 | 114 | 0.81 | |

### Keyword: Project

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **PROJECT** | 839 | 11 | 14 |
| *MEETING* | *77* | *28* | *49* |
| SOEIS | 66 | 60 | 6 |
| RESEARCH | 63 | 46 | 17 |
| MEMBERS | 41 | 10 | 31 |
| *MANAGEMENT* | *40* | *7* | *33* |
| TASK | 39 | 21 | 18 |
| *MEETINGS* | *34* | *13* | *21* |
| SELF | 30 | 5 | 25 |
| WORK | 28 | 16 | 12 |
| ORGANIZATION | 22 | 6 | 16 |
| INFORMATION | 21 | 9 | 12 |
| EUROPEAN | 20 | 12 | 8 |
| LOET | 20 | 3 | 17 |
| PETER | 20 | 5 | 15 |
| RE | 19 | 16 | 3 |
| RESULTS | 19 | 13 | 6 |
| TSER | 19 | 18 | 1 |
| REGARDS | 17 | 3 | 14 |
| THEORETICAL | 17 | 10 | 7 |
| COURSE | 16 | 2 | 14 |
| COMMUNICATION | 15 | 6 | 9 |
| EU | 15 | 12 | 3 |
| SOIS | 15 | 14 | 1 |
| AMSTERDAM | 14 | 7 | 7 |
| CASE | 14 | 6 | 8 |
| POLICY | 14 | 6 | 8 |
| ROME | 14 | 12 | 2 |
| TASKS | 14 | 8 | 6 |
| UNIVERSITY | 13 | 3 | 10 |
| COMMITTEE | 12 | 3 | 9 |
| FUNDED | 12 | 6 | 6 |
| GROUP | 12 | 5 | 7 |
| LEVEL | 12 | 9 | 3 |

| | | | |
|---|---|---|---|
| ORDER | 12 | 7 | 5 |
| PARTNERS | 12 | 6 | 6 |
| SYSTEMS | 12 | 6 | 6 |
| BEST | 11 | 2 | 9 |
| DIFFERENT | 11 | 8 | 3 |
| MOSES | 11 | 3 | 8 |
| OVERALL | 11 | 11 | 0 |
| PART | 11 | 9 | 2 |
| BASED | 10 | 2 | 8 |

## Keywords: Project x Meeting

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **PROJECT** | 104 | 3 | 2 |
| *MEETING* | *49* | *28* | *21* |
| *MEETINGS* | *22* | *13* | *9* |
| SOEIS | 14 | 14 | 0 |
| ROME | 13 | 12 | 1 |
| RE | 11 | 8 | 3 |
| PURPOSE | 10 | 10 | 0 |
| *MANAGEMENT* | *9* | *6* | *3* |
| LOET | 7 | 0 | 7 |
| SWITZERLAND | 7 | 0 | 7 |
| BIELEFELD | 6 | 1 | 5 |
| DATE | 6 | 0 | 6 |
| FULL | 6 | 6 | 0 |
| LOCATION | 6 | 6 | 0 |
| PERCENTAGE | 6 | 3 | 3 |
| REGARDS | 6 | 1 | 5 |
| SEPT | 6 | 1 | 5 |
| AMSTERDAM | 5 | 2 | 3 |
| PETER | 5 | 0 | 5 |

## Keywords: Project x Management

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| **PROJECT** | 43 | 3 | 3 |
| *MANAGEMENT* | *40* | *7* | *33* |
| MEETING | 31 | 9 | 22 |

## Appendix B.10 – *Collocate Analysis: Figure 4 -> Task*

### Distribution of 'Task'

| N | File | Words | Hits | per 1,000 | Plot |
|---|---|---|---|---|---|
| 1 | e1.txt | 117,598 | 387 | 3.29 | |
| 2 | e2.txt | 137,817 | 90 | 0.65 | |
| 3 | e3.txt | 96,066 | 93 | 0.97 | |
| 4 | e4.txt | 140,888 | 47 | 0.33 | |

### Keyword: Task

| WORD | TOTAL | LEFT | RIGHT |
|---|---|---|---|
| TASK | 761 | 61 | 83 |
| *PROJECT* | *37* | *18* | *19* |
| SELF | 26 | 14 | 12 |
| LOET | 25 | 12 | 13 |
| TASKS | 23 | 21 | 2 |
| *MEETING* | *22* | *11* | *11* |
| AMSTERDAM | 21 | 10 | 11 |
| DAVID | 19 | 10 | 9 |
| THEORETICAL | 19 | 14 | 5 |
| WP | 19 | 18 | 1 |
| BIELEFELD | 18 | 13 | 5 |
| INPUT | 18 | 14 | 4 |
| ORGANIZATION | 18 | 15 | 3 |
| RESEARCH | 18 | 11 | 7 |
| SYSTEMS | 18 | 12 | 6 |
| INTEGRATION | 17 | 10 | 7 |
| POLICY | 17 | 11 | 6 |
| REPORT | 17 | 9 | 8 |
| RESULTS | 17 | 12 | 5 |
| HENK | 16 | 4 | 12 |
| LEYDESDORFF | 16 | 6 | 10 |
| NETWORKS | 16 | 13 | 3 |
| PETER | 16 | 8 | 8 |
| WORKPACKAGE | 16 | 7 | 9 |
| DATA | 14 | 10 | 4 |
| SOCIAL | 14 | 5 | 9 |
| CONTRIBUTION | 13 | 12 | 1 |
| MODEL | 13 | 11 | 2 |
| MODELING | 13 | 7 | 6 |
| MODELS | 13 | 5 | 8 |
| EUROPEAN | 12 | 4 | 8 |
| INNOVATION | 12 | 5 | 7 |
| MOSES | 12 | 7 | 5 |
| OBJECTIVE | 12 | 11 | 1 |

| | | | |
|---|---|---|---|
| TEAM | 12 | 1 | 11 |
| MEMBERS | 11 | 9 | 2 |
| PART | 11 | 8 | 3 |
| REGARDS | 11 | 6 | 5 |
| STUDY | 11 | 4 | 7 |
| SYSTEM | 11 | 5 | 6 |
| ANALYSIS | 10 | 3 | 7 |
| CASE | 10 | 4 | 6 |
| KRIEGER | 10 | 1 | 9 |
| PROGRESS | 10 | 7 | 3 |
| SUB | 10 | 9 | 1 |
| ACCOUNTABILITY | 9 | 3 | 6 |
| BASED | 9 | 3 | 6 |
| BEST | 9 | 6 | 3 |
| DELIVERABLE | 9 | 6 | 3 |
| EMPIRICAL | 9 | 6 | 3 |

## Keywords: Task x Project

| WORD | **TOTAL** | **LEFT** | **RIGHT** |
|---|---|---|---|
| **TASK** | 46 | 5 | 4 |
| *PROJECT* | *37* | *18* | *19* |
| MEMBER | 6 | 4 | 2 |
| RESPONSIBLE | 6 | 2 | 4 |

## Keywords: Task x Meeting

| WORD | **TOTAL** | **LEFT** | **RIGHT** |
|---|---|---|---|
| **TASK** | 22 | 0 | 0 |
| *MEETING* | *22* | *11* | *11* |
| BIELEFELD | 5 | 4 | 1 |