

An Analytical Study of Knowledge Management Softwares

Dipali P. Meher
Research Scholar
IMED, Bharati Vidyapeeth,
Pune 38

Nilesh Mahajan, PhD
Professor
IMED, Bharti Vidyapeeth, Pune
38

Pallawi Bulakh, PhD
Assistant Professor
Modern College of Arts,
Science and Commerce,
Ganeshkhind, Pune 16

ABSTRACT

The important characteristic of information processing system is its search ability, and should be available at any time anywhere. In 21st century, knowledge management is an important part of an organization. All organizations, irrespective of their type, are thinking of availability of data, information and knowledge. The real time access to any information which exists in organization is nothing but knowledge on which strategic decisions are based. There are many software's in real life which do knowledge management of an organization. Author has studied 72 knowledge management software's on attributes like advance search, collaboration, content management, data management, discussion boards, document management, full text search, guided problem solving, self service portal, self learning and tried to find out some relationship in these attributes.

Keywords

Knowledge, knowledge management, knowledge management software's

1. INTRODUCTION

Knowledge is present in thought and in concept of every individual. It resides in brain of individual and it is used in organizations processes, products, services, systems and outcomes. Knowledge is nothing but result of learning. It comes after data and information. Actually knowledge is authenticated information and thought to be true. So to value it should be stored, tested, focused, shared, used and maintained.

Knowledge management is used in companies to help companies create, share and use knowledge effectively. It is systematic management of vital knowledge. So it is a process of capturing knowledge, understanding knowledge by using information technology systems in order to maintain reuse and deploy that knowledge in order to achieve organization's goals. Knowledge management systems are generally IT based systems used for managing knowledge in organization.

Knowledge management refers to the process of creating, sharing, using, managing information and knowledge of an organization and within the organization. It is always a multidisciplinary approach which is used by any organization to achieve its goal. Many large and small scale organizations are applying knowledge management as a part of their business strategy, information technology and human resource management. Knowledge management typically focuses on organizational objectives, innovations, competitive advantages through lessons learned. Knowledge management is always enabler of organizations learning.

2. KNOWLEDGE MANAGEMENT SOFTWARE'S

Knowledge Management is an important tool for any organizations sustainable growth and management from all views [1]. Knowledge Management is always playing fundamental role in any research organization. As in academic organizations research has also become an important criterion to be considered for its valuation and accreditation [2]. Many academic organizations receive special status based on their research because their outcome is only knowledge. So to store this research data there are many techniques and tools and methods are used. Many authors have already studied these techniques such as Brainstorming, Learning and Idea Capture

Peer Assist, Learning Reviews, After Action Review,

Storytelling, Collaborative Physical Workspace, APO Knowledge Management Assessment Tool, Knowledge Café, Communities of Practice, Taxonomy, Document Libraries Leading to a Document Management System, Knowledge Bases (Wikis, etc.), Blogs, Social Network Services, Voice and Voice-over-Internet Protocol (VOIP), Advanced Search Tools, Building Knowledge Clusters, Expertise Locator / Who's Who, Collaborative Virtual Workspaces, Knowledge Portal, Video Sharing [3], case based reasoning system, Group Decision Support System, semantic search engines and link machines [4]. Many organizations have their own knowledge base and proper Knowledge Management tools techniques and methods with corresponding value indicators [5].

In any area of research knowledge management is important. There are so many readymade software's available for it.

Knowledge management systems: they are IT based systems and designed particularly to promote the creation and sharing of information and knowledge by using various tools and technologies so that information can be turned into knowledge. A Knowledge Management System can be used to help to increase business, staff performance, client satisfaction, and quality of service and product that organization provides [6].

2.1 Advantages of Using Knowledge Management Software's:

- 1) It creates knowledge base for an organization
- 2) They easily provide support to new technologies
- 3) They capture knowledge for future use.
- 4) Due to existing knowledge base employee can find any information at any time
- 5) Create knowledge base articles
- 6) Reduces information technology costs without compromising internal and external users.

- 7) Improves communication between organizational staff
- 8) Delivers better measurement and accountability
- 9) It provides reusability of resources and avoids duplication of information which increases employees confidence
- 10) Due to different access rights information is tracing becomes easy
- 11) Online suggestion can be received through feedback system
- 12) It provides formal and informal training in single eLearning platform
- 13) New Employees can be easily become familiar with organization and its structures and working environment.
- 14) It provides more explicit knowledge such as success stories rather than tacit knowledge.
- 15) Data resources become more discoverable and reusable.[7]
- 16) Last but not least such systems improves decision making.[8]
- 17) It enhances team coordination and collaboration
- 18) Improves the flow of knowledge
- 19) Helps an organization to grow more network connections, more knowledge nodes
- 20) Provides better knowledge transfer which occur in execution of projects.

2.2 Knowledge Management Technologies

They can be categorized into groupware, workflow, content/document management systems, enterprise portals, eLearning, scheduling and planning, Telepresence [9].

- 1) Groupware: It is generally application software which is designed to help people at remote locations who are involved in common task to achieve their goals. They consist of calendar, electronic meetings, collective wittings, shared database access with all persons can see the information's shared with others and all activities.[10]
- 2) Workflow: Such tools allow the representation of processes which do creation, maintenance and use of organizational knowledge. It also involves all the processes to create forms.
- 3) Content/Document management: they are the software's that automate process of creating web document and web contents.
- 4) Enterprise Portals: it is nothing but website that shows collective information about entire organization and its processes to peoples such as project teams.
- 5) ELearning: it allows organization to create customized training and education software which includes lesson plans, progress monitoring and online teaching.
- 6) Scheduling and Planning: automatic schedule creation and maintenance i.e. through Microsoft Outlook. And for planning Microsoft Project.

- 7) Telepresence: it is virtual face to face meetings at remote locations. A common known term is videoconferencing.
- 8) Apart from above many artificial intelligence tools and software's, simulation tools, semantic networks are available as knowledge sharing tools.

2.3 Analysis of Knowledge Management Open Source Software's

Total 72 Software's of Knowledge Sharing in Knowledge Management are studied on the basis of following attributes. If software supports the feature then its value for that cell is 1 otherwise 0.

- Advance Search(A₁)
- Cataloging/Categorization(A₂)
- Collaboration(A₃)
- Content Management(A₄)
- Data Management(A₅)
- Discussion Boards(A₆)
- Document Management(A₇)
- FAQ(A₈)
- Full Text Search(A₉)
- Guided Problem Solving(A₁₀)
- Self Service Portal(A₁₁)
- Self Learning(A₁₂)

The database is stored in excel is attached at Annexure 1 (Table 1)

Graph 1 shows the number of software's supporting selection criterion.

Hypothesis: H₀: Attribute A₁, A₂ are independent.

The database is created and then test statistics (chi square test) is applied for it. Please refer Annexure 2 (Table 2).

$$\chi^2 = N(ad-bc)^2 / (a+b)(a+c)(b+d)(c+d)$$

Level of significance is $\alpha=0.05$

After applying test statistics -chi square test is applied to see whether the combinations of attributes are accepted or rejects. If value of $t_s > 3.481$ then combination those attribute is rejected otherwise it is accepted. The final result shows whether the attribute are dependent or not. Means if it rejected then they are dependent otherwise not. Annexure 3 (Table 3) shows the answer of chi-square test and its values. Annexure 4 (Table 4) shows final dependent attributes.

Graph 2 shows the combination of attributes which are commonly considered together in all knowledge management software's. The attributes advance search and cataloging and FAQ and guided problem solving are strongly correlated with each other.

3. CONCLUSION

In this paper authors have studied various knowledge management software's according some attributes. The study have undertaken for initiative for creation of knowledge sharing software for academic institute. To create such customized software's which attributes are considered first and then later is identified which will be helpful for creation of any knowledge sharing software for academic institute.

Study shows that attributes dependency (please refer Table3 and Table 4) of already available knowledge management software's. In future authors want to prepare knowledge management framework for knowledge sharing for research in academic institute to avoid knowledge loss across different academic institutions by considering above attributes in priority.

4. REFERENCES

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5. APPENDIX

Annexure 1

Table 1: Data of software's

Sr.No.	Software Name	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂
1	myTips	0	0	1	0	0	0	0	1	0	1	1	0
2	Astute Knowledge	0	0	0	1	1	0	1	1	0	1	0	1
3	Berkeley Publisher	0	0	1	0	0	0	1	0	0	1	1	0
4	ManIPulate	0	0	0	0	1	0	1	0	1	0	0	1
5	Querybot	0	0	0	0	1	0	0	1	1	0	0	0
6	Correlate K-Map	0	1	1	0	1	0	1	0	0	0	0	1
7	Unity	1	0	1	1	0	0	1	1	1	0	1	0
8	FirmCover	1	0	1	0	0	0	1	0	1	0	0	0
9	APTEAN Knowledge Management	1	0	0	0	0	0	1	1	0	0	1	1
10	GemShelf	1	0	1	1	0	0	1	0	1	0	1	0
11	Haydle	1	0	1	0	0	0	0	0	1	0	1	1
12	Helprace	1	0	1	0	1	1	1	0	1	1	1	0
13	Indexedmind	1	0	1	0	0	1	0	0	0	0	0	0
14	IntelliResponse Virtual Agent	1	0	0	0	0	0	0	1	1	1	1	1
15	LuitDox Platinum	1	0	0	0	0	1	1	0	0	0	0	0
16	PeerAware	1	0	1	0	0	0	0	0	1	0	1	1
17	Union Square	1	0	1	0	1	1	1	0	1	0	0	0
18	Confluence	1	1	1	0	0	1	1	1	1	0	1	1
19	Freshdesk	1	1	0	0	0	1	0	1	1	1	1	1
20	eXo Platform	1	1	1	0	0	1	1	0	1	0	0	0
21	Zendesk	1	1	0	0	1	1	1	1	1	0	1	1
22	Bitrix24	1	1	1	0	1	1	1	1	1	1	1	1
23	Novo Knowledge Base Software	1	1	0	0	0	1	1	0	1	0	1	1
24	FuzeDigital	1	1	1	0	1	1	1	1	1	1	1	1
25	PHPKB	1	1	1	1	1	0	1	1	1	0	1	1

26	AnswerHub	1	1	1	1	0	1	1	1	1	1	1	1
27	Intelligence2day	1	1	1	1	1	1	1	0	1	0	0	0
28	Lessons Learned Server	1	1	1	1	1	0	1	0	1	0	0	1
29	Qiqa	1	1	1	0	1	0	0	1	1	0	1	1
30	Unified Knowledge Platform	1	1	1	0	1	1	1	1	1	1	1	1
31	Qbeeko	1	1	1	1	1	1	0	1	1	1	1	1
32	AGI Self Service	1	1	1	0	1	0	0	1	1	1	1	1
33	Assyst	1	1	1	1	1	1	1	1	1	1	1	1
34	Auros	1	1	1	1	1	1	1	1	1	1	1	1
35	BIKS	1	1	1	0	1	1	1	1	1	1	1	1
36	BoxesOS	1	1	1	0	1	1	1	1	0	1	1	0
37	ComAround Zero	1	1	0	1	1	0	1	1	1	1	1	1
38	Comm100 Knowledge Base	1	1	0	1	0	1	1	0	1	1	1	1
39	CommonSense	1	1	1	0	0	1	1	1	1	1	1	1
40	Connotate	1	1	1	0	1	0	0	0	1	0	1	1
41	digi-libris Reader	1	1	1	1	1	0	1	0	0	0	0	0
42	DoyleSoft Knowledge Base	1	1	1	0	1	0	1	0	1	1	1	1
43	eKMS	1	1	1	0	0	0	1	0	0	1	1	1
44	Enterprise Wiki	1	1	1	0	1	0	1	1	0	1	1	0
45	Guru	1	1	1	1	1	1	1	0	0	0	1	1
46	HelpConsole	1	1	1	1	1	0	1	1	1	0	1	1
47	Heroic Knowledge Base	1	1	1	0	1	0	1	1	1	0	0	1
48	Hivemind	1	1	1	0	0	1	1	0	1	0	1	0
49	Inmagic Presto	1	1	0	0	1	0	1	1	0	0	1	0
50	Interspire Knowledge Manager	1	1	1	0	1	0	1	1	1	1	1	0
51	Knowledge Management Suite	1	1	1	0	1	0	1	1	1	1	1	0
52	KnowledgeBase	1	1	1	0	1	1	0	0	0	0	0	0
53	Knowledgebase Manager Pro	1	1	1	1	1	1	1	1	1	0	1	0
54	Kreoo	1	1	1	1	1	1	1	1	1	0	1	1
55	LearnLode	1	1	1	1	0	1	1	1	0	1	0	1
56	Lumo Flow	1	1	1	0	1	1	1	1	1	0	1	1
57	OmniknowledgeFAQ	1	1	0	1	0	0	0	1	1	0	1	0
58	POC Link	1	1	0	0	1	0	1	1	1	1	1	1
59	Problem Solver	1	1	1	1	0	1	0	1	1	1	1	1
60	ProProfs Knowledge Base	1	1	0	1	1	0	1	1	0	0	1	0
61	Question and Answer	1	1	1	0	0	1	0	1	1	0	1	1
62	ROK'IT	1	1	1	1	1	1	1	1	1	1	0	0
63	ScreenSteps	1	1	1	0	0	0	0	0	1	0	1	1
64	Sem.Note	1	1	1	0	0	0	0	0	1	0	0	0
65	SlimWiki	1	1	1	0	0	0	1	0	1	0	1	0
66	Social Collaboration	1	1	1	0	1	1	1	1	1	1	1	1
67	StreetSmarts Knowledge Base	1	1	1	0	1	1	1	1	1	1	1	1
68	SupportPoint	1	1	0	0	1	0	1	1	0	1	1	0
69	USU Knowledge Center	1	1	1	1	1	1	1	1	1	1	1	1
70	WebBoard Knowledge Base	1	1	1	0	1	1	1	1	1	0	0	0
71	WSN Insight	1	1	1	0	0	1	0	0	1	0	1	1
72	XPERT Knowledge	1	1	0	0	1	1	1	0	0	0	1	0

Annexure 2

Table 2: Analysis of knowledge management software's based on chi square test

Combination	A	b	c	d	a+b	a+c	b+d	c+d	ad-bc	ts
A ₁ A ₂	55	11	1	5	66	56	16	6	264	14.1429
A ₁ A ₃	52	14	3	3	66	55	17	6	114	2.5272
A ₁ A ₄	22	44	1	5	66	23	49	6	66	0.7028
A ₁ A ₅	40	26	4	2	66	44	28	6	-24	0.0850
A ₁ A ₆	37	29	0	6	66	37	35	6	222	6.9195
A ₁ A ₇	50	16	4	2	66	54	18	6	36	0.2424
A ₁ A ₈	41	25	3	3	66	44	28	6	48	0.3400
A ₁ A ₉	52	14	2	4	66	54	18	6	180	6.0606
A ₁ A ₁₀	29	37	3	3	66	32	40	6	-24	0.0818
A ₁ A ₁₁	52	14	2	4	66	54	18	6	180	6.0606
A ₁ A ₁₂	40	26	3	3	66	43	29	6	42	0.2572
A ₂ A ₃	45	11	10	6	56	55	17	16	160	2.2002
A ₂ A ₄	20	36	3	13	56	23	49	16	152	1.6474
A ₂ A ₅	39	17	5	11	56	44	28	16	344	7.7185
A ₂ A ₆	33	23	4	12	56	37	35	16	304	5.7346
A ₂ A ₇	44	12	10	6	56	54	18	16	144	1.7143
A ₂ A ₈	38	18	6	10	56	44	28	16	272	4.8256
A ₂ A ₉	44	12	10	6	56	54	18	16	144	1.7143
A ₂ A ₁₀	27	29	5	11	56	32	40	16	152	1.4504
A ₂ A ₁₁	45	11	9	7	56	54	18	16	216	3.8571
A ₂ A ₁₂	37	19	6	10	56	43	29	16	256	4.2232
A ₃ A ₄	18	37	5	12	55	23	49	17	31	0.0657
A ₃ A ₅	34	21	10	7	55	44	28	17	28	0.0490
A ₃ A ₆	31	24	6	11	55	37	35	17	197	2.3077
A ₃ A ₇	41	14	13	4	55	54	18	17	-18	0.0257
A ₃ A ₈	32	23	12	5	55	44	28	17	-116	0.8411
A ₃ A ₉	44	11	10	7	55	54	18	17	198	3.1059
A ₃ A ₁₀	25	30	7	10	55	32	40	17	40	0.0963
A ₃ A ₁₁	41	14	13	4	55	54	18	17	-18	0.0257
A ₃ A ₁₂	33	22	10	7	55	43	29	17	11	0.0075
A ₄ A ₅	16	7	28	21	23	44	28	49	140	1.0164
A ₄ A ₆	13	10	24	25	23	37	35	49	85	0.3564
A ₄ A ₇	20	3	34	15	23	54	18	49	198	2.5768
A ₄ A ₈	17	6	27	22	23	44	28	49	212	2.3306
A ₄ A ₉	18	5	36	13	23	54	18	49	54	0.1917
A ₄ A ₁₀	11	12	21	28	23	32	40	49	56	0.1565
A ₄ A ₁₁	17	6	37	12	23	54	18	49	-18	0.0213
A ₄ A ₁₂	15	8	28	21	23	43	29	49	91	0.4243
A ₅ A ₆	23	21	14	14	44	37	35	28	28	0.0354
A ₅ A ₇	38	6	16	12	44	54	18	28	360	7.7922
A ₅ A ₈	32	12	12	16	44	44	28	28	368	6.4240
A ₅ A ₉	33	11	21	7	44	54	18	28	0	0.0000
A ₅ A ₁₀	22	22	10	18	44	32	40	28	176	1.4143

A ₅ A ₁₁	32	12	22	6	44	54	18	28	-72	0.3117
A ₅ A ₁₂	27	17	16	12	44	43	29	28	52	0.1267
A ₆ A ₇	30	7	24	11	37	54	18	35	162	1.5012
A ₆ A ₈	24	13	20	15	37	44	28	35	100	0.4513
A ₆ A ₉	30	7	24	11	37	54	18	35	162	1.5012
A ₆ A ₁₀	19	18	13	22	37	32	40	35	184	1.4706
A ₆ A ₁₁	28	9	26	9	37	54	18	35	18	0.0185
A ₆ A ₁₂	24	13	19	16	37	43	29	35	137	0.8368
A ₇ A ₈	34	20	10	8	54	44	28	18	72	0.3117
A ₇ A ₉	39	15	15	3	54	54	18	18	-108	0.8889
A ₇ A ₁₀	26	28	6	12	54	32	40	18	144	1.2000
A ₇ A ₁₁	40	14	14	4	54	54	18	18	-36	0.0988
A ₇ A ₁₂	31	23	12	6	54	43	29	18	-90	0.4812
A ₈ A ₉	35	9	19	9	44	54	18	28	144	1.2468
A ₈ A ₁₀	27	17	5	23	44	32	40	28	536	13.1172
A ₈ A ₁₁	38	6	16	12	44	54	18	28	360	7.7922
A ₈ A ₁₂	30	14	13	15	44	43	29	28	268	3.3661
A ₉ A ₁₀	24	30	8	10	54	32	40	18	0	0.0000
A ₉ A ₁₁	43	11	11	7	54	54	18	18	180	2.4691
A ₉ A ₁₂	37	17	6	12	54	43	29	18	342	6.9479
A ₁₀ A ₁₁	29	3	25	15	32	54	18	40	360	7.5000
A ₁₀ A ₁₂	23	9	20	20	32	43	29	40	280	3.5365
A ₁₁ A ₁₂	37	17	6	12	54	43	29	18	342	6.9479

The value of test statistics (i.e. ts) > 3.481 then rejects the hypothesis otherwise accept the hypothesis. If hypothesis is rejected means attributes are dependent on each other. If the

hypothesis is accepted then the attributes are independent on each other. So analysis shows following attributes are dependent on each other.

Annexure 3

Table 3: Analysis of knowledge management software's (for finding dependency)

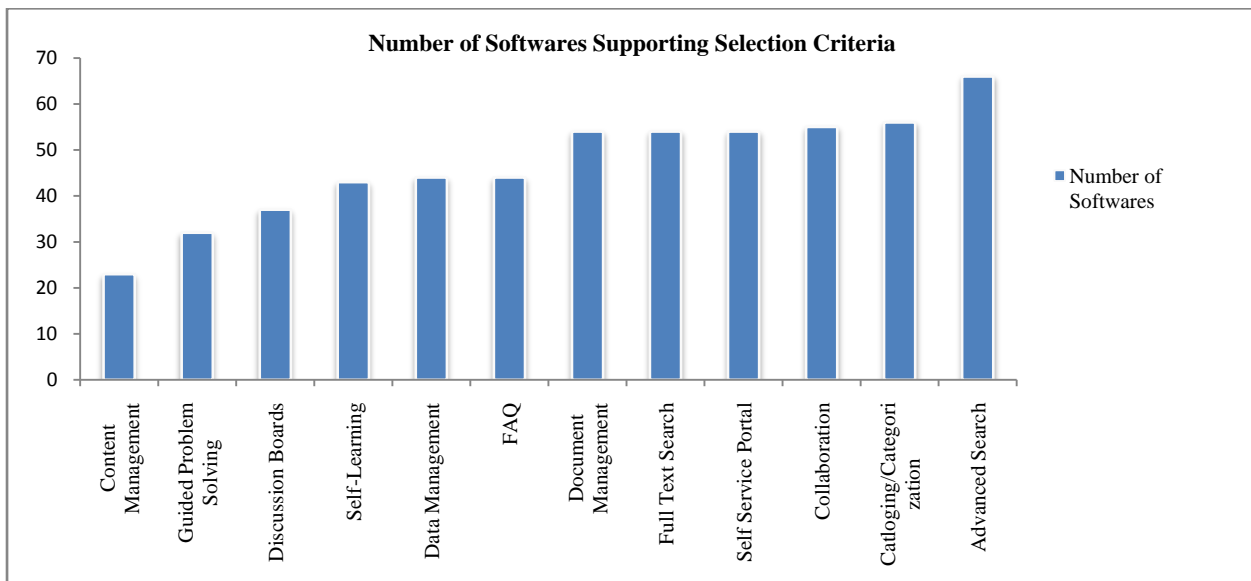
Combination	Accept/Reject	Dependency	Attributes
A ₁ A ₂	Reject	Dependent	Advance Search and Cataloging/Categorization
A ₁ A ₆	Reject	Dependent	Advance Search and Discussion boards
A ₁ A ₉	Reject	Dependent	Advance Search and Full Text Search
A ₁ A ₁₁	Reject	Dependent	Advance search and Self Service Portal
A ₂ A ₅	Reject	Dependent	Cataloging/Categorization and Data Management
A ₂ A ₆	Reject	Dependent	Cataloging/Categorization and Discussion Boards
A ₂ A ₈	Reject	Dependent	Cataloging/Categorization and FAQ
A ₂ A ₁₁	Reject	Dependent	Cataloging/Categorization and Self Service Portal
A ₂ A ₁₂	Reject	Dependent	Cataloging/Categorization and Self Learning
A ₅ A ₇	Reject	Dependent	Data Management and Document Management
A ₅ A ₈	Reject	Dependent	Data Management and FAQ
A ₈ A ₁₀	Reject	Dependent	FAQ and Guided Problem Solving

A ₈ A ₁₁	Reject	Dependent	FAQ and Self Service Portal
A ₉ A ₁₂	Reject	Dependent	Full Text Search and Self Learning
A ₁₀ A ₁₁	Reject	Dependent	Guided Problem Solving and Self Service Portal
A ₁₀ A ₁₂	Reject	Dependent	Guided Problem solving and Self Learning
A ₁₁ A ₁₂	Reject	Dependent	Self Service Portal and Self Learning

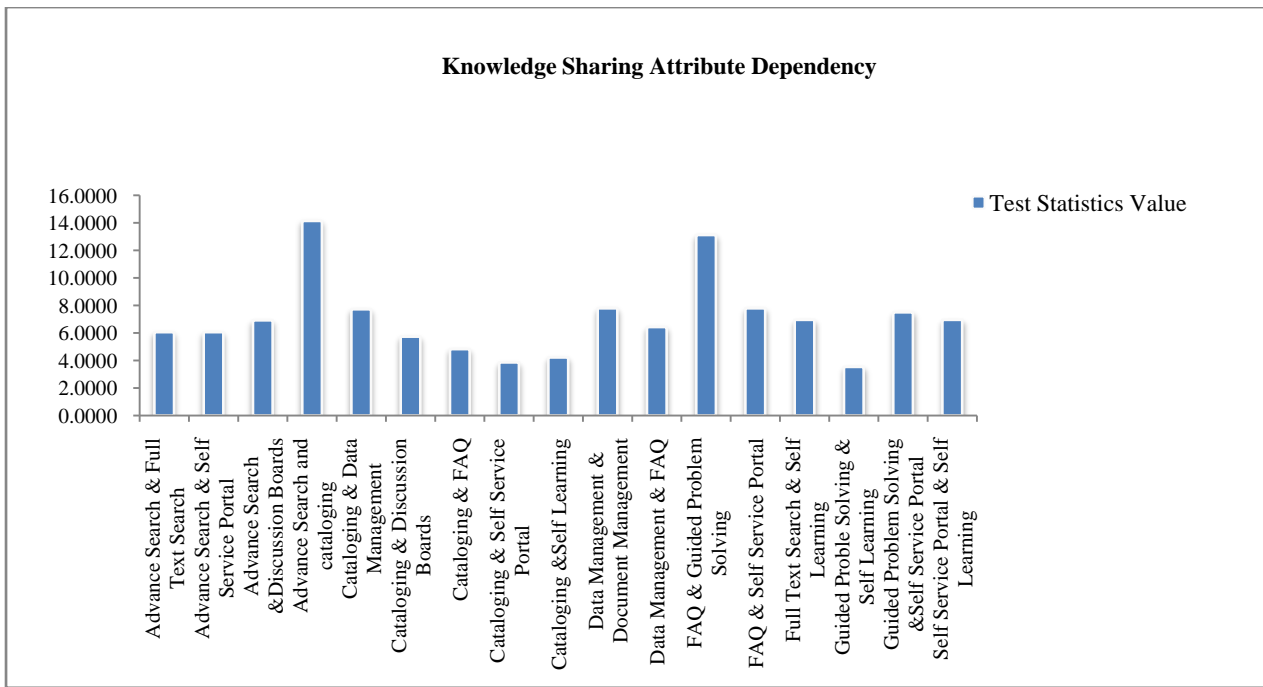
Annexure 4

Table 4: Final dependent attributes

Combination	Attributes
A ₁ A ₂ A ₆ A ₉ A ₁₁	Advance Search depends on Cataloging/Categorization, Discussion boards, Full Text Search, Self Service Portal
A ₂ A ₅ A ₆ A ₈ A ₁₁ A ₁₂	Cataloging/Categorization depends on Data Management, Discussion Boards, FAQ, Self Service Portal, Self Learning
A ₅ A ₇ A ₈	Data Management depends on Document Management, FAQ
A ₈ A ₁₀ A ₁₁	FAQ depends on Guided Problem Solving, Self Service Portal
A ₉ A ₁₂	Full Text Search depends on Self Learning
A ₁₀ A ₁₁ A ₁₂	Guided Problem Solving depends on Self Service Portal and Self Learning
A ₁₁ A ₁₂	Self Service Portal depends on Self Learning



Graph 1: Number of Software's supporting Selection Criteria



Graph 2: Knowledge Sharing Attribute Dependency