



A Study of ADB's Knowledge Taxonomy

Final Report

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Abbreviations

CoP	Community of practice
IT	Information technology
OIST	Office of Information Systems and Technology
RSDD	Regional and Sustainable Development Department

EXECUTIVE SUMMARY

In September 2010, the Overseas Development Institute was tasked by the Knowledge Management Center in the Regional and Sustainable Development Department in ADB to conduct a study of ADB's knowledge taxonomy. The study aimed to explore, recommend, and draw implications from a classification of knowledge products and services to improve ADB's organizational efficiency, from an internal and external perspective.

In its basic definition, a taxonomy is a structured set of names and descriptions used to organize information and documents in a consistent way (Lambe 2007). A knowledge taxonomy focuses on enabling the efficient retrieval and sharing of knowledge, information, and data across an organization by building the taxonomy around workflows and knowledge needs in intuitive structures (Lambe, 2007, Malafsky, 2008). The study embraced the idea that knowledge taxonomies can serve multiple purposes within an organization and that these purposes are the key to decide what type of taxonomy is required. Taxonomies not only help structure information and support expertise and learning, they also contribute to greater sharing, and can change the working environment, moving towards greater creativity and collaboration (Lambe 2007, Hedden, 2010).

Interviews were conducted with 32 staff at ADB's Headquarters and Resident Missions from November to December 2010. An online questionnaire aimed at ADB's Knowledge Management Coordinators was circulated to help inform the final study report by validating conclusions derived from the interviews.

The research findings indicated that there are a number of learning issues which could be improved upon through working on knowledge taxonomies: these relate to issues with document storage and retrieval, with capturing and retaining knowledge, with facilitating coordination and linkages, and with managing knowledge for external audiences. There are some important dynamics that lie beneath these issues, which have relevance to both the 'supply' side of taxonomy development, e.g., existing taxonomies, information technology infrastructure, and the 'demand' side, e.g., business processes, career development, and organizational culture.

Based on these findings, we make the following recommendations. First, taxonomy development should be managed through a typical project management structure. The delivery of the taxonomy activity would have to start with a clear mandate to design an overall corporate taxonomy for ADB and validate or merge existing local taxonomies. The mandate should also provide adequate financial resources.

Second, the taxonomy development should proceed in an incremental manner, looking to improve knowledge taxonomies in ADB in small, discrete steps. Priorities for action should be: a basic country-sector-theme taxonomy to be rolled out first to all operational departments and include compulsory tagging; improved consistency and labeling in the database of ADB staff; working to bring greater consistency between internal and external lists of sectors and 'topics'; and, a facility to allow for decentralized taxonomy development, to fit within relevant corporate taxonomies.

Third, the taxonomy development should be treated a key activity within the knowledge management project, and should be carried out in tandem with: the development of an internal policy on which documents can be considered final and of ADB-wide relevance; investment in IT

and a corporate search engine; strengthening of the role of the Knowledge Management Coordinators.

Finally, it is important to develop a communication strategy to keep the staff informed about the various activities under the umbrella of the knowledge management project, and, in particular, for taxonomy development.

I. INTRODUCTION

1. It is your first day of work at ADB. You enter the ADB building in Manila and are told that your office is on the 4th floor. You walk along the ground floor corridor that leads to the elevators, but you do not find any sign or direction. You start to walk along corridors. You see many doors, people working at their desks, but no names or office numbers at the doors. You realize that finding your office will be a struggle and you ask for help. Eventually you find a person who knows that you were coming and they lead you to your new office room. As with the other rooms, there is no name or number to help others find you.

2. A few months later you are familiar with the colleagues working next to your office and you know your way around your floor. However you, as well as most of your colleagues, find it difficult to find people to ask specific questions or simply find out what are they working on. Soon you realize that a tagging system of the offices and areas of ADB's Headquarters would help to bring order and make it easier to find colleagues and share ideas with them.

3. Of course the reality is different. Offices in the ADB Headquarters are tagged with nice plates indicating the office number as well as the name of the staff and job title. Floors are also tagged and allocated to different departments and units. Without this tagging system it would be very difficult to work in ADB.

4. A similar problem is faced by ADB staff when navigating and trying to find documents among hundreds of thousands of resources stored in various internal and external ADB databases. For example, as of 2 December 2010, the external web site at www.adb.org had 309,748 files (informants). Some 66,660 files were in Adobe's portable document format, the standard format of most publications, reports, brochures, and board documents available online. In 2010, about 3,000 project documents and 400 publications, all in portable document format, were uploaded. A total of 8,000 of document and images have been added to ADB's website (ibid.). In ADB's internal systems, the number of stored documents probably grows at a faster rate.

5. Unless these documents are properly mapped and an adequate navigation tool is procured, the search for specific documents is similar to finding a meeting or office room in an ADB building without tags and signs. More generally, without effective mapping, signposting and labeling of different types of tacit and explicit knowledge in the organization, important opportunities for organizational effectiveness and learning will be lost.

6. A *Knowledge Management Framework*¹ adopted by ADB in 2004 reiterates that knowledge generation and sharing is a prerequisite for ADB to achieve poverty reduction in Asia. In doing so, ADB has to become a knowledge-based organization. *Enhancing Knowledge Management under Strategy 2020: Plan of Action for 2009–2011*² identifies four pillars to achieve this:

- Sharpen the Knowledge Focus in ADB's Operations
- Empower the Communities of Practice
- Strengthen External Knowledge Partnerships
- Further Enhance Staff Learning and Skills Development

¹ Available: www.adb.org/knowledge-management/knowledge-framework.asp

² Available: www.adb.org/knowledge-management/action-plan.asp

7. Progress has been achieved at a different pace in different areas. The second pillar on communities of practice (CoPs) has shown the most progress. For example, 13 CoPs have been established and are now a reality of day-to-day life in ADB. The guidelines for sector and thematic reporting have been rewritten, the budget for the CoPs has been increased, and processes for sector peer review of country partnership strategies and lending products are in place. Procedures have been developed and are being applied involving seeking inputs from qualified CoP members (appointed at the concept stage), and a database of peer reviewers for loan products is being maintained by the Knowledge Management Center in collaboration with the Office of Information Systems and Technology (OIST). Progress has been achieved in terms of a new intranet page; the Knowledge Management Center is communicating internally and externally on the knowledge management framework of ADB, through its knowledge series, blogs, newsletters, workshops and presentations; new multi-donor public information centers have been opened in six countries in 2010; 47 knowledge management coordinators have been appointed and have received new, detailed terms of reference (though they struggle to find the time to fulfill the role); ADB publications have been uploaded on external platforms such as Scrib.com to enhance their accessibility; training courses such as on the subjects of *Learning in Teams*, *Reflective Practice*, and *Learning from Evaluation* were delivered in ADB's headquarters. However, one area that has not seen much progress is the area of knowledge taxonomy or taxonomies; in other words, understanding the ways tacit and explicit knowledge is organized. ADB is at the center of the current study.

A. Purpose and Design of the Study

8. In September 2010, the Overseas Development Institute was tasked by the Knowledge Management Center, in the Regional and Sustainable Development Department (RSDD) in ADB, to conduct a study of ADB's knowledge taxonomy.³ The aim was to explore, recommend, and draw implications from a classification of knowledge products and services to improve ADB's organizational efficiency, from an internal and external perspective.

B. Study Questions and Methodology

9. The study comprises two deliverables:

- A literature review on knowledge taxonomy to explore specialized books and articles, blogs, and IT magazine articles focusing, in particular, on taxonomies from the point of view of linkages with knowledge and organizational change.
- A report that has also been informed by the literature review, as well incorporating results from semi-structured interviews with 27 staff from ADB's Headquarters (and five from Resident Missions), and six interviews with external organizations between November and December 2010. Results from these interviews have been validated through an online questionnaire targeted at the Knowledge Management Coordinators in ADB and launched in January 2011.

³ The researchers were Arnaldo Pellini, Research Fellow, and Harry Jones, Research Officer. The task manager was Olivier Serrat, Principal Management Specialist, concurrent Head, Knowledge Management Center, ADB.

II. KEY FINDINGS

A. Finding from the Literature Review

10. The advent of the internet has created an increased interest in using taxonomies for structuring information for easier management and retrieval (Hunter, (ND), Lambe, 2007).

11. Pincher (2010) posits that without a taxonomy designed for storage and management or one that supports better search functions, all types of management systems in an organization are nearly useless. However, many organizations are not willing to commit the necessary resources to the design of taxonomies. When they do, they often limit their investment to information technologies without adequate investment in the appropriate categorization of information and data.

12. In its basic definition, a taxonomy is a structured set of names and descriptions used to organize information and documents in a consistent way (Lambe, 2007). A knowledge taxonomy focuses on enabling the efficient retrieval and sharing of knowledge, information, and data across an organization by building the taxonomy around workflows and knowledge needs in an intuitive structure (Lambe, 2007, Malafsky, 2008).

13. This study embraces the idea that knowledge taxonomies can serve multiple purposes within an organization and that these purposes are the key to decide what type of taxonomy is required. Taxonomies not only help to structure information, support expertise and learning, they also contribute to greater sharing and can change the working environment, moving towards greater creativity and collaboration (Lambe, 2007, Hedden, 2010). The benefits associated with taxonomies are therefore not limited to the simple organization of documents and information materials. They can be broader, contributing to (Lambe 2007):

- Making explicit knowledge that is embedded in documents available at the point of need.
- Mapping and categorizing the tacit knowledge and expertise embedded in staff.
- Facilitating coordination and knowledge sharing.
- Making sense of the knowledge of the organization and creating a common vocabulary and a common way of working.

14. The contribution that taxonomies can make to greater collaboration is shared by the online questionnaire respondents. 64% agreed and 36% strongly agreed that taxonomies should help improve working relationships and coordination across ADB's Headquarters. 56% agreed and 40% strongly agreed that taxonomies should help improve working relationships and coordination between ADB's Headquarters and Regional and Resident Missions.

15. The benefits highlighted by Lambe dispel some myths surrounding taxonomies and have been presented in a paper by the Montague Institute Review (2002):

- A taxonomy can only be expressed as a hierarchical list of topics.
- There is only one 'right' taxonomy for each organization.
- You can shortcut the taxonomy development process by the wholesale adoption of someone else's taxonomy.
- A corporate taxonomy should be derived solely from the content in the document repositories.
- It is acceptable to create separate taxonomies for people and for documents.

- Personal and departmental taxonomies do not need to be integrated with other corporate taxonomies.
- Taxonomy applications (i.e., what the user sees) must conform to the same rules as the underlying taxonomy structure (i.e., how the data is stored in computers).
- Taxonomies should always be tightly integrated and computerized to achieve maximum efficiency.
- Taxonomies should be funded and managed by a centralized IT function.

16. When an organization decides to embark in the creation or development of a taxonomy, it needs to adopt a structured approach (e.g., a project approach) that starts with receiving a clear mandate from senior management (Lambe 2007). This is because before thinking about the structure of the taxonomy or taxonomies to be adopted in an organization it is important to define the purpose. In other words, the organization needs to agree or define why it wishes to develop a taxonomy and whether it should, for example, be limited to the organization of documents or to achieving greater cooperation and sharing. These decisions will define the type of taxonomy (or taxonomies) that are required, and more importantly the steps and consultation required to deliver them.

1. Taxonomy Structures

17. The literature reviewed for this study identifies the following forms that taxonomies can take (Lambe, 2007, Hedden, 2010, Pincher, 2010):

- **Lists** are the most basic form of taxonomy, and can also be an interim step for developing more complex taxonomies. Ideally the list should contain between 12 and 15 elements.



Figure 1: List Structure ⁴

- **Tree structures** reflect the way we think and are powerful in terms of presenting the parent-child relationships of the cause-effect relationship of the taxonomy. The structures are the most used taxonomies in organizations and enterprises and are

⁴ Source: <http://blog.adyax.com/2009/03/english-drupal-tutorial-node-auto-term-taxonomy-tips-and-jquery-menu-api-in-use/>

- **Polyhierarchies** accommodate topics that belong to different categories and that may not fit into trees structures and hierarchies. Polyhierarchies are complex visual representations as they often entail too many connections between categories and words. Therefore they work well when hyperlinks allow jumping between categories and cross references.

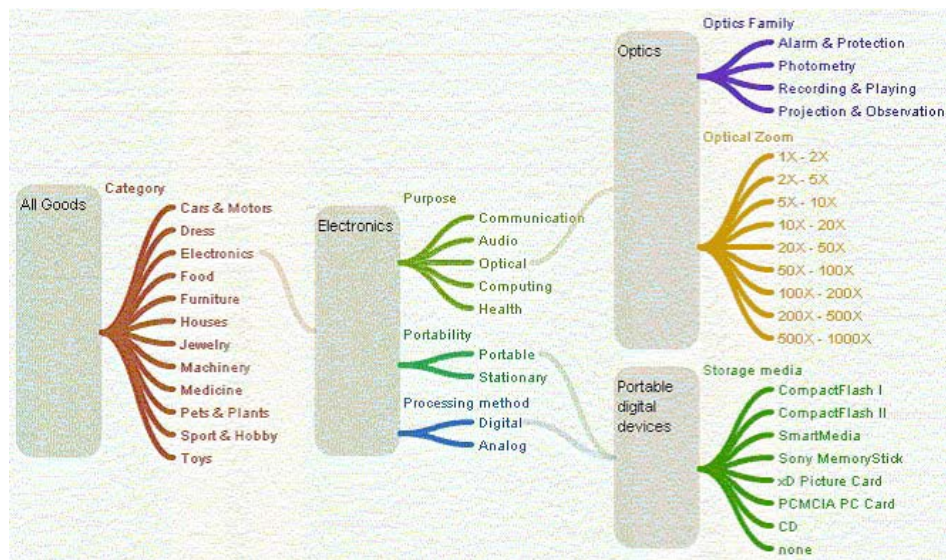


Figure 4: Polyhierarchy Structure ⁷

- **Matrices** are a good way to present a taxonomy and work best when there is a well defined body of knowledge that can be organized in two or three dimensions. This means that two of three attributes allow reaching documents from two of three directions

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Period																			
1	1 H																		2 He
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne	
3	11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar	
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr	
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe	
6	55 Cs	56 Ba	*	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra	**	103 Lr	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Uub	113 Uut	114 Uuq	115 Uup	116 Uuh	117 Uus	118 Uuo
*Lanthanoids	*			57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb		
**Actinoids	**			89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No		

Figure 5: Two-Dimensional Matrix Structure ⁸

⁷ Source: www.quasineutronian.com/popular.html

⁸ Source: www.meta-synthesis.com/webbook/35_pt/pt_database.php?button=data+mapping

- **Facets** consist of multiple smaller hierarchies that can be searched in combination. Facets work well when there is a large content and are the best type of taxonomy when metadata and tags are consistently used and added to digital documents. They are particularly useful when tree structures have become too large and complex. Facets do now have the clear representation of a map. Facets require also a certain level of experience by users.

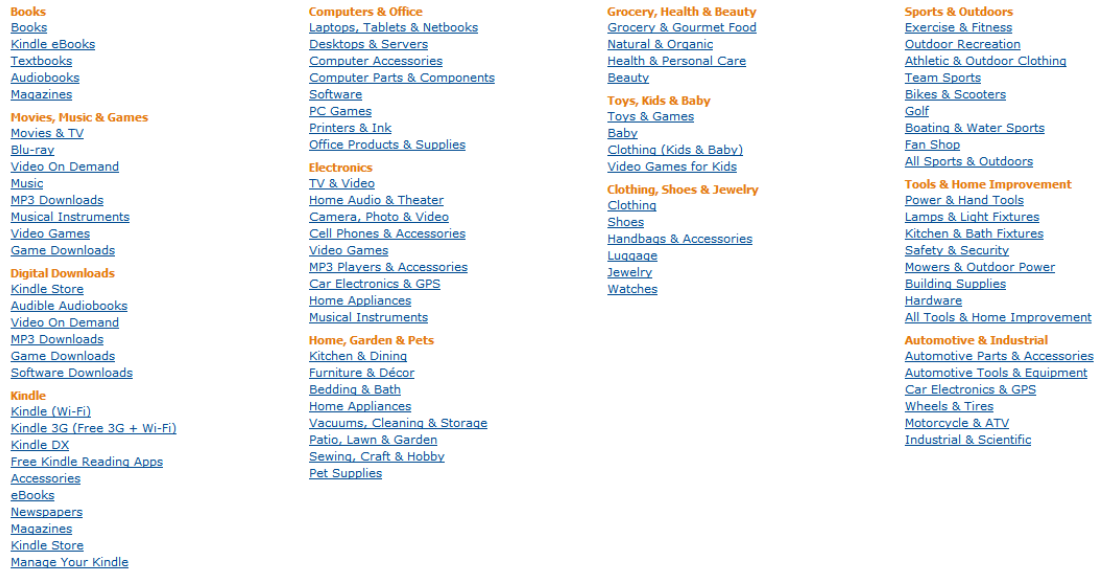


Figure 6: Faceted Taxonomy ⁹

- **System maps** are visual representations of a knowledge domain where proximity and connection between categories are used to express their taxonomies as well as real world relationships. The visual representation is central to this type of taxonomy. They are useful when there is a coherent system of knowledge that can be communicated visually.

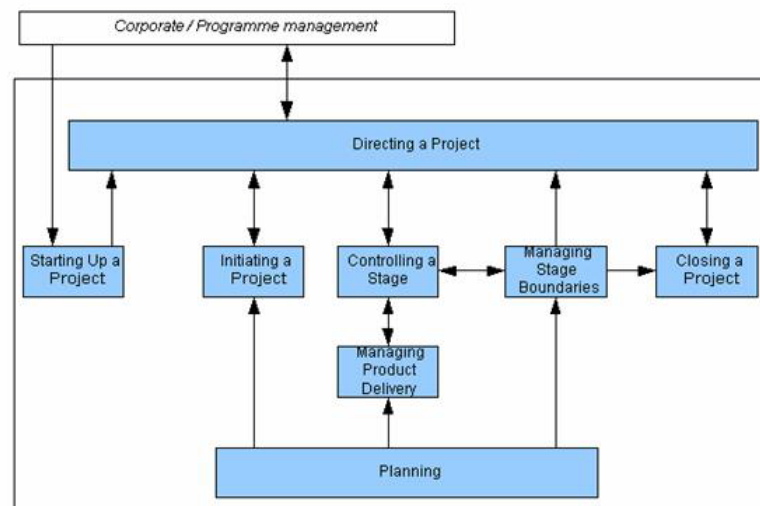


Figure 7: System Map ¹⁰

⁹ Source: www.amazon.com/gp/site-directory/ref=topnav_sad

2. Taxonomy Development

18. The taxonomy development process involves a number of steps, and may need to be more or less collaborative depending on its intended purpose – in general, the greater the complexity of the organization or of the purpose of the taxonomy, the more consultation required in its design. Beyond the mandate of senior management as mentioned earlier, the following steps are suggested in the literature:

- Analysis and scoping of the needs, capacities, skills and work practices of key stakeholders.¹¹
- The scoping and analysis of the needs of key stakeholders informs the design stage, when decisions have to be made as to whether the taxonomy will be internal or will also be used by external users; whether it will organize homogenous or heterogeneous content; whether it will be applied to a disciplined knowledge environment where documents are tagged, metadata applied, and a common vocabulary is consistently used or not; whether it organizes tacit and explicit knowledge; and, whether it will include folksonomies, typical of social networks with free tagging.
- A team should then be assembled with the necessary skills, expertise, and access to key stakeholders. The project team should ensure that all areas of expertise for the development of the taxonomy are areas required by all users and are aligned with the needs and perspectives analyzed at the beginning of the project.
- Taxonomies can change working habits by, for example, requiring all staff to tag documents uploaded in the internal intranet systems or to conform to a certain vocabulary. These changes often encounter resistance, which needs to be managed through a communication strategy. The communication plan should pay attention to key audiences (e.g., senior management, project teams and users) and keep all stakeholders informed about the purpose of the taxonomies, the approach that is being adopted, any progress, what is expected from the audience, and what comes next. The communication plan should also include feedback mechanisms to ensure that staff opinions are heard.
- Once the taxonomy has been drafted it is important to test it with selected users. The communication plan should also include feedback mechanisms to ensure that staff opinions are heard and used for the improvement of the taxonomy.
- Taxonomies have to be flexible and adaptable to changes within the organization. Therefore, the taxonomy delivered by the taxonomy project will never really be finalized and will need to be updated over time.

19. Section III (Conclusions and Recommendations) includes suggestions on how these steps can be implemented in ADB. However, first here are the main results from the study.

B. Main Findings of the Study

20. This section presents the main findings of the study. It draws on the following research:

- **Semi-structured interviews:** In total, 32 semi-structured interviews were carried out with ADB staff. 27 were carried out in person in ADB's Headquarters, while five were carried out over the telephone with staff in Resident Missions. Drawing on good practice for reviews that look into complex topics such as understanding the use of knowledge in

¹⁰ Source: www.emeraldinsight.com/

¹¹ The present study can be considered an element of such analysis and scoping.

policy, a number of questions were selected based on the underlying 'theory of change', corresponding to areas that are thought to contribute to knowledge management and learning, as well as having space in each interview for more wide-ranging discussions about the realities of the interviewee's work. In order to ensure that interviewees were as open and honest as possible, the interviewees will remain anonymous and the list of staff participating will not be provided (however, a discussion of the profile of the interviewees and their representativeness can be found later in this section).

- **Document review:** A variety of internal ADB documents were obtained on a rolling basis in order to provide further insights, comparisons and triangulation. As the research team was not permitted access to document storage systems, documents were obtained as and when the team became aware of items of relevance, drawing on direct recommendations from interviewees.
- **Study of comparator organizations:** As part of the study, ODI interviewed individuals in six comparator organizations to provide some insights through comparisons with existing taxonomy systems elsewhere. The full details on the current state of taxonomy efforts in each of these organizations can be found in Appendix 4, and a brief summary of the findings can be found in the box below.
- **Analysis and iterations:** The interviews were, where possible, digitally recorded in order to capture the full richness of discussions for review as and when needed, and, although some notes were taken during interviews, transcripts were then typed up from the recordings at a later date. A qualitative data analysis software package¹² was used in order to ensure that the analysis of interview transcripts was as systematic, comprehensive and transparent as possible, and in order to better triangulate interview data with other sources. Interim findings were drafted and presented at ADB's Headquarters during the process, in order to elicit feedback from ADB staff and the Knowledge Management Coordinators, in order to provide multiple perspectives and interpretations of the issues emerging from the interviews.
- **Online survey:** An online questionnaire was targeted at ADB's Knowledge Management Coordinators in order to validate the conclusions and recommendations derived from the interviews and to inform the final study report. 25 responses were received out of a possible 47.

21. Clearly there could not be an entirely 'representative sample' as interviews were voluntarily undertaken. When the aim of the study is to generate a qualitative understanding of how learning and knowledge management works in ADB, representativeness is not the primary criterion for a high quality study. However, an effort was made in order to interpret transcripts in the light of interviewees positions in the organization, their career and educational backgrounds, their history in ADB, and where they sit in relation to (and their contact with) the Knowledge Management Center, and consideration has been given in the analysis to which groups have not had such a prominent voice in the interview process. Information on the demographics of the interviewees can be found in Annex 1. The survey also has a relatively small sample size, which was not randomly selected. However, the responses are representative of individuals who have been tasked with improving knowledge management in ADB, and hence are more likely to be in touch with the challenges and learning dynamics than your average staff member. Therefore, we argue that the judgments delivered by the survey on our proposed recommendations are worth taking into consideration.

22. Other biases found in the interviews: While many insights that emerged from the interviews marked out areas of strong consensus between interviewees and have also been

¹² MaxQDA 2010

given added weight by other documents reaching similar conclusions, or by resonating strongly with themes in the wider literature, this was not the case universally. Those issues that marked points of disagreement and divergence, and which have not been highlighted by other work, should be interpreted in light of the limits of semi-structured interviews as a research tool: they should be taken seriously and thought should be given to their interpretation, but they may be best treated as issues that would bear further investigation, rather than firm statements about how things definitely do work. Based on triangulation from interviews and evidence gathered from the document review, it has been possible to make some fairly robust statements about learning dynamics in ADB, and recommendations that are supported by a number of different sources of evidence. However, these caveats are important.

23. This section proceeds as follows: first, we discuss the key issues for learning in ADB, in order to provide insights for the potential purposes of a taxonomy. Next, we look at the dynamics underlying those strengths and weaknesses, in order to understand the opportunities and constraints for taxonomy development. Finally, we assess the potential avenues for taxonomy development.

1. Learning Issues: What is the need for ADB taxonomies?

24. As outlined above, a taxonomy is a structured set of names and descriptions used to enable the efficient retrieval and sharing of knowledge, information, and data across and organization (Lambe, 2007, Malafsky, 2008). There are a number of things that a taxonomy could be designed to cover, and a number of potential functions that a taxonomy could be designed to perform (Lambe, 2007, Hedden, 2010). The literature stresses the importance of clearly defining the purpose of a taxonomy before making significant investments in developing it (Lambe 2007). Therefore, although a taxonomy is likely to have a variety of benefits within the organization, it is important to assess what might be the most important purpose for its design, and the problem it is designed to address. The research surfaced the following key issues for learning in ADB:

a. Document Storage and Retrieval:

25. Most interviewees felt that the most effective way of finding information was through networks and contacts. Some felt that IT systems are designed for storage work for individuals to store their own work for later retrieval, and in some instances for a team to use a common storage drive to organize their information and documentation. However, as a general rule, interviewees felt that they could only usually find specific documents and pieces of information that they already knew were there. When it was necessary to find anything else, searches for information (generally passed on to administrative staff) often took considerable amounts of time, without consistent results. This trend was also noted by the assessment of ADB's knowledge management framework (Teleos, 2008), which also correctly notes that this perception could also be partly explained by rising expectations for such systems. The 2010 Learning for Change survey gave a relatively high rating to the 'technology' component. However this was weighted towards their effectiveness as a tool for corporate communications and the general recognition that they have value for knowledge management, rather than a strong endorsement of their current effectiveness at promoting innovation and learning (ADB, 2010b).

26. The comparative strength of networks for knowledge and learning is more strongly triangulated. As well as directly arguing that they were the first port of call for retrieving relevant documents and learning more generally, the positive examples given by the majority of

interviewees of learning in ADB referred to the functionality of interpersonal links on an issue, for example, the network of economists in ADB, who collaborate around co-produced products, have regular meetings and were felt to be a 'tight-knit group'. These findings are backed up by the Learning for Change survey, which showed consistently high levels of agreement with statements about the importance of interpersonal networks for learning, as well as those referring to their effectiveness in ADB (ADB, 2010b).¹³ It is important to note that IT systems were not felt to facilitate these kinds of interactions and staff also rated technology second lowest in terms of enabling people to identify internal sources of expertise (ADB, 2010b), although again the network of economists provided a counter-example to the trend (interviewees reported a well-functioning roster categorizing ADB economists expertise).

b. Capturing and Retaining Knowledge

27. The interviews suggested that there are some problems of capturing and sharing knowledge, particularly lessons gained from operational experience. Interviewees frequently described situations where a significant depth of understanding and experience is held by long-serving individuals in a country, region or department, but not written up or formalized in any way. This means that it is more difficult to integrate such lessons and knowledge into programming particularly in a context where there can be a high turnover of staff moving regularly to different positions (within the ADB though, usually). This is supported by evidence from the Learning for Change survey, where the most negative score was given to the statement that ADB has a 'resilient organizational memory and is not vulnerable to the loss of important knowledge when staff members move to other jobs in the organization or leave'¹⁴ (ADB, 2010b). This seems to relate to the fact that many interviewees assumed that 'knowledge' refers only to explicit knowledge products such as TAs and other reports, rather an appreciation of the value of tacit knowledge—although it is not clear which of these two might be the symptom and which the cause.

28. There were some examples where this was not the case. Generally, they involved instances where a team or department had either formalized the incorporation of reviews and reflection into their business processes (such as in SARD), or where they had an individual with time specifically assigned to promoting learning from experience (for example, in the India RM). This variability could possibly explain the wide range of scores for the use of related tools in the Learning for Change survey.¹⁵

c. Coordination and Linkages

29. Possibly the most prominent issue emerging from the interviews were difficulties in learning between different parts of ADB. On a number of occasions interviewees indicated that they did not feel there was sufficient sharing of knowledge and expertise between them and some (named) other departments, where significant improvements in efficiency or effectiveness were missed due to insufficient communication and coordination between them. This was particularly noted by interviewees working in areas, which could be classified as relating to the

¹³ For example, 64% of respondents 'strongly agreed' or 'agreed' with the statement that there is widespread recognition that while knowledge is created in the minds of individuals, knowledge development thrives in a rich web of professional networks among individuals,' and 59% of respondents 'strongly agreed' or 'agreed' with the statement that 'emergent learning is encouraged by creating opportunities for informal sharing of knowledge and experience'.

¹⁴ 44% 'disagreed'.

¹⁵ The report noted the diverse range of views to the question about evaluations and there is similarly a spread of opinion about tools for surfacing tacit knowledge and after-action reviews.

'operational' side of ADB's work (the regional departments, RSDD, the Economics and Research Department (ERD), and Independent Evaluation Department (IED). That this seems to be a trend affecting these departments could be explained by the fact that the creation of the regional departments reproduced similar functions a number of times, for each geographical region, whereas before they would have been carried out for each region in the same department. The evaluation of RSDD (ADB, 2005) also indicated that there were issues, which prevented coordination between operational and non-operational departments, although the Learning for Change survey returned a relatively ambiguous message on this issue.

30. Many interviewees pointed out that the CoPs were designed to improve communication, coordination, and learning between the 'silos' on sector- and thematic knowledge. However, there was a general recognition that in many cases they were networks still in their formative stages, and currently they functioned in this way to a variable extent at best. Coordination was felt to be more consistently embedded within regional departments, between Headquarters-based staff and resident missions, and to a certain extent between resident missions that fell under the same regional department. Interviewees generally put this down to the existence of individuals acting as common link points for a number of resident missions on particular sectors or themes.

d. Managing Knowledge for External Audiences

31. Interviewees often focused their comments about knowledge management in ADB on the issue of properly capitalizing upon the efforts put into products, such as technical assistance reports. A caricature, which is commonly painted is that ADB traditionally has spent a great deal of time and money on TA reports that are then read by very few people, have little influence and limited ownership in-country. The survey assessing the implementation of the knowledge management framework seems to suggest that this may be the case, suggesting a decline in perceptions of communication and knowledge transfer between ADB and its clients (Teleos, 2008). This seems to be the case particularly where there is not demand for such products and services, for example in countries where there is not a strong perceived role for technical knowledge in politics and policy-making.

32. However, a number of interviewees argued that this situation is fast changing in departments where their clients are demanding a better array of knowledge products and services. In particular, ADB teams dealing with India and the People's Republic of China reported a changing situation on this front, with a number of concrete steps being taken to improve the ways in which they manage knowledge for external audiences – for instance assigning a staff member in the RM as the principal knowledge coordination point with significant time allocated and attendant changes in the RM's procedures and ways of working.

Box: Comparator Organizations

As part of the study, ODI interviewed individuals in six comparator organizations (viz., UNDP, OECD, ODI, OneUN Vietnam, GIZ, and Sida) to provide some insights through comparisons with existing taxonomy systems elsewhere. At a basic level, the interviews suggest that the issue of knowledge taxonomies is of rising concern and importance elsewhere. Many similar learning issues were mentioned by interviewees such as the difficulty of finding documents in large, geographically distributed organizations, which you do not know are already there. In some instances they illustrated the dangers of inadequate attention to taxonomies, where opportunities were missed and knowledge management had become somewhat chaotic. Also, some of the organizations contacted are currently reviewing or improving their taxonomies and the issue of knowledge management infrastructure in general is rising on the organizational agenda as it is recognized that old systems have not met current needs and that a step-change is needed. Many of the organizations covered are further along in this process than ADB, and it could be worth continuing to monitor the progress of their taxonomy and knowledge management initiatives in order to provide further lessons for ADB about the content and process of taxonomy development. The findings about knowledge management and taxonomies in each organization can be found in Appendix 4.

2. Learning Dynamics: Opportunities and Constraints for Taxonomy Development

33. There are a number of ways in which working to develop, consolidate, and/or integrate taxonomies could help to tackle these issues, and facilitate learning and knowledge management in ADB. However, before trying to assess and decide between these, it is important to get an idea of the underlying dynamics of the noted trends. In particular, it is crucial to look at the state of various factors that are required in order to have any functioning knowledge taxonomy (i.e., for any purpose) in the organization. By looking at these, it will be possible to assess the opportunities and constraints for taxonomy development. We have grouped the factors according to the 'supply' and 'demand' sides for a taxonomy: the former refers to existing taxonomies and information technology (IT) infrastructure that make up the actual functioning taxonomy; the latter refers to those who might use the taxonomy in terms of both formal workflows, processes and resource allocations, as well as the less formal factors such as organizational culture and working habits.

a. Supply Side

34. There are a number of existing taxonomies that cover various areas of ADB's knowledge and work. Some examples:

- The current taxonomy for the knowledge products and services that ADB provides to its developing member countries and other stakeholders have been defined (according to ADB, 2004) as (i) formal knowledge products and services, that are programmed as such and targeted at clients, audiences, and partners; and (ii) knowledge by-products derived from delivering loans or other activities. However, 'many if not all' consider it uninformative (Serrat, 2009).
- There are a number of taxonomies used in the 'eStar' electronic document storage system, with different departments organizing their (hierarchical) folder systems according to their business processes and priorities.

- The operational departments have a folder structure, which is a taxonomy and which categorizes documents according to country, sector and themes, project types (e.g., Loan, Grant, MFF, TA), and project names.
- The external relations department has a taxonomy for different types of publication (e.g., briefs, working papers, news releases, etc), also a list of 11 topics (e.g., environment, poverty reduction) each with a number of sub-topics. Documents can also be tagged according to geographical area (including countries, regions and sub-regions) and date.
- The website groups ADB's work according to 43 'topics' (e.g., aid effectiveness, economic crisis, governance, knowledge management).
- The ADB project database classifies ADB-assisted projects by country, sector contribution, theme (strategic goals addressed), and type of assistance (e.g., sovereign loans, technical assistance, or private sector).
- The Compliance Review Panel Office has developed an internal taxonomy that follows their work processes and organizes information and documentation used by staff.
- Traditionally, OGC has had a very good filing system using a decimal system, similar to the Dewey system used in libraries, to store hardcopies of all legal resources and files. The system has being transferred into digital form and has been excellent to retrieve cases and decisions made in the past for their work.

35. There are also some ongoing efforts to develop new taxonomies. Of particular note:

- An effort, led within OIST, attempted to define one, single, high-level corporate taxonomy to classify all information in ADB. The proposed subject areas for the taxonomy were: operational, financial, administrative, operations evaluation, economic research, knowledge and strategic area, and OGC.¹⁶ Each of those was intended to cover a specific department, and within the subject area there was to be a unique set of categories to classify information.
- In 2010, the Knowledge Management Center brainstormed a possible classification of knowledge in ADB, resulting in the following classification: Lending and non-lending operations knowledge, sector and thematic knowledge, research knowledge, and business and corporate knowledge.

36. The IT infrastructure is an important issue to look at in order to understand the current opportunities and constraints. eStar is the main system used for document storage and retrieval. The interviews revealed some negative perceptions of the system, and a number of factors were identified, which hindered its potential for finding and sharing documents and knowledge. For example, many different departments have their sections of the database closed and inaccessible to other departments and it is only recently that staff have been able to access the system on mission. Interviewees often remarked that even where there is access to other departments' systems the interface is not seen to be user-friendly and it is still extremely difficult to locate documents, which one does not already know where to find.

37. In addition, the tagging of documents is not mandatory, meaning that in practice it rarely gets done, and works according to blank text-boxes. Therefore, labeling information according to agreed taxonomies requires finding the requisite guide for the common 'tags'. Uploading and searching for documents was felt to be a time-consuming task, and interviewees reported that

¹⁶ However, in the same document, it also specifies a different list of these subjects: operational, knowledge and strategic, administrative, and financial.

these tasks were generally delegated from the individual who generates or needs the information to administrative staff.¹⁷

38. In addition to this, there is the issue of multiple databases. There are about 150 locations where ADB staff can store (internal) information and documents, which adds to the difficulty of finding things. This is compounded by the fact that there is no way to search across all databases at once, and the current search engine is seen as insufficient. There therefore seems to be a strong need for an 'enterprise' search engine, which it was indicated may already be in the process of being acquired. Some aspects of the IT infrastructure were praised and interviewees felt that systems did often help teams work together and manage projects. For example, the C-Cube platform provides a space (including wikis and blogs) for over 90 projects and was appreciated by those who reported using it.

39. It should be noted that, although the interviews give a generally negative picture, there were mixed messages from other sources about the role of IT systems in facilitating knowledge management. The Learning for Change survey ranked 'technology' subsystem as the highest of the four dimensions, although there was a split of opinion (including a significant amount of disagreement) with the statement 'the necessary systems and infrastructure for knowledge management are in place, understood, and working effectively'.¹⁸ One factor that is possibly clouding the issue is differences in the expectations of different survey respondents and interviewees were not always clear on their reference point for praise or criticism of the system. It is undoubtedly the case that the current systems represent a significant improvement from the previous paper-based system, however many interviewees with experience in other organizations felt that ADB was comparatively 'behind the curve' compared to many other organizations. Therefore, we conclude that the issues raised here do have a certain degree of validity, even if they are not fully and completely triangulated.

b. Demand Side

40. In order to deliver any benefits to an organization, taxonomies need to be actively used by the intended audiences. In order to assess the likely opportunities and constraints for future taxonomy development, it is therefore crucial to look at the factors that shape and drive behavior relating to managing knowledge in ADB.

41. In terms of concrete, formal measures being in place throughout the organization to promote knowledge management, there is a mixed picture. Interviewee perceptions generally resonated with the Learning for Change survey results that gave relatively good scores to high-level leadership, for example that there was a clear vision for knowledge management and communication from leadership and that knowledge management was important for organizational success (ADB, 2010b). The appointment of a Vice-President for Knowledge Management and Sustainable Development was used as one positive example and the clearly communicated message from Chinese and Indian representatives about their desire for effective knowledge management was another. However, it is not clear the extent to which this

¹⁷ There is an ongoing project to roll-out a new version of eSTAR. The taxonomy in eSTAR2 is structured to have at most six levels of folders organized in the following taxonomy: Primary level (e.g., Department); Secondary level (e.g., Division/Country); Tertiary level (e.g., Sector), Tertiary (Sub Folder 1) (e.g., Project Type), Tertiary level (Sub Folder 2) (e.g., Project Name); Binder level (e.g., binder). The first three folders are fixed elements in eSTAR's taxonomy. The Tertiary sub folders can be created depending on the requirements of the department. A taxonomy structure is always ended by a Binder which is the container of uploaded documents (OIST, 2009).

¹⁸ 36 'agreed' or 'strongly agreed' while 35 'disagreed' or 'strongly disagreed'; that represents the fourth most disagreed and strongly disagreed of all 40 questions.

message has filtered down throughout the organization. The extent to which time and resources are assigned to knowledge management activities seems to vary significantly between teams and departments. Where staff members have time and funds explicitly set aside for this, interviewees have reported significant improvements in the management of knowledge within their team and between their team and other parts of ADB, as well as in the efficiency and effectiveness of their team. However, in other instances this is not the case and such benefits are not realized. Related to this, a number of interviewees argued that the level of funding given to CoPs was not commensurate with their ambitions and importance in cutting across organizational silos.

42. Similarly, in some teams and departments knowledge management and learning is built into business models, for example through processes for review and reflection leading into planning cycles, or where CoPs have formalized peer review processes with operational departments. However, this has (probably rightly) not been centrally-driven, which means that while key documents (e.g., *Enhancing Knowledge Management under Strategy 2020: Plan of Action for 2009–2011*) call for knowledge management activities to be built into key business processes such as country partnership strategies (Serrat, 2009), this has not been consistently picked up. Similarly, individual incentives have been put in place in some departments where knowledge management has a high priority (e.g., producing a variety of knowledge products being a key target for performance appraisals in one department). However, the incentives as experienced across ADB as a whole were not felt to be strongly weighted towards knowledge management activities such as communicating knowledge and collaborating with colleagues.

43. These factors have contributed to, or are perhaps a symptom of, what many interviewees perceived as an organizational culture that can hinder the storage, retrieval and sharing of documents and information. In terms of attitudes towards knowledge storage, retrieval and sharing some interviewees expressed the belief (supported by the tacit assumptions of some others) that ADB was culturally still 'a paper organization', seeing 'knowledge' largely in terms of formalized, technical reports. Many interviewees argued that knowledge management was largely seen as an administrative and procedural task, similar to a previous era where hard copy documents had to be passed through a system of files and data closets. Interviewees often remarked that it was not common to find staff members who routinely shared or made available documents, information and knowledge without being prompted to do so, and it was much more frequent for individuals to presume that others would not find their work useful. Some interviewees reported that many departments felt quite isolated from each other, with little interaction between them, and others reported a perception that an informal culture of hierarchy and status restricted the free flow of knowledge. It was even proposed by a small number of interviewees that some staff actively protect their knowledge from others and insulate teams and departments from communication flows, in order to promote their own careers.

44. On the other hand, a number of interviewees did look with favor on the ability to learn from other colleagues. As already noted, most felt that their (informal) networks were an effective means of finding information on a given topic, getting to learn about a new challenge or position, and fostering linkages and collaboration between departments. A few interviewees actively challenged the idea of a rigid hierarchical culture, arguing that it might represent a prevailing perception rather than the reality. Again, the trust, rapport, and spirit of sharing and collaboration between the network of economists in the organization was cited.

45. Overall, this presents a mixed picture of the 'demand' side, but interviews tended to paint a picture of obstacles and difficulties more than good functioning. The assessment of the

knowledge management implementation framework showed a downward trend for the question of sustaining values and behaviors for knowledge management, and the Learning for Change survey seems to lend support to the idea that there may be some unresolved issues. The 'people' subsystem as a whole scored bottom of the four; the question of incentives and rewards for learning received an extremely high level of negative feedback, as well as low scores for the level of trust and sharing between colleagues (ADB, 2010b).

3. Potential Avenues for Taxonomy Development

46. Based on the discussion above, we can now assess the potential avenues for taxonomy development. The literature outlines a number of different domains of knowledge within an organization within which a taxonomy can function (Lambe, 2007):

- The first knowledge domain is information. This refers to the explicit knowledge embedded in documents and publications. The purpose of a taxonomy here is to support the information management system required so that the staff and external users can retrieve the right information when it is needed.
- The second knowledge domain is expertise and learning. It refers to the expertise and experience acquired by individuals within organizations and it is associated with tacit knowledge. The purpose of the taxonomy here is to map and categorize the knowledge embedded in staff expertise so that it can be made available and known within the organization.
- The third knowledge domain is collaboration. This refers to the social aspects of knowledge and sharing within an organization. A taxonomy can help here to map areas of knowledge and therefore enable sharing and coordination.
- The fourth knowledge domain is the culture of the organization, which refers to mechanisms to enable sharing and putting knowledge into practice. A taxonomy here helps with sensemaking and creates a common vocabulary as well as a common and new way of working.

47. There are a number of ways in which these various functions could help to improve on some of the issues outlined in the first part of this section. It should be noted that the online survey returned a high level of support for all five suggested functions of knowledge taxonomies in ADB¹⁹ – this lends support to the idea of examining the potential of taxonomies to fill these functions. We will now assess in more detail how working to develop/improve/consolidate/roll out taxonomies could potentially help with these issues, and discuss the extent to which those potential functions are realistic in light of the current dynamics outlined in the second section.

48. With relation to the issues around document storage and retrieval, a taxonomy in the domain of information would seem to be the ideal solution. The online survey returned particularly high support for a corporate-level taxonomy to fill this function.²⁰ However, the discussion of the supply and demand-side dynamics seem to make it clear that there are a number of significant bottlenecks and large obstacles that would need to be overcome before such an ambitious goal could be fully realized. Gaps in the IT infrastructure required (opening databases and providing an enterprise search engine) would need to be remedied, but

¹⁹ The average score for the 'purpose of taxonomy' section of the survey was 1.5 – directly in between 'agree' and 'strongly agree'.

²⁰ The average score for using a corporate taxonomy to classify ADB documents and ADB knowledge products was 1.4 in both cases.

considerable behavior change would possibly need to be achieved in order to reach a critical mass of staff using the systems.

49. As such, it may not be the best use of limited resources to attempt to pursue a comprehensive **corporate taxonomy** that covers all information and documentation in ADB. However, there could be significant value in pursuing such an ambition on a smaller scale, where these issues are most pressing: targeting the development of a taxonomy for documents in areas where there are also problems of coordination and collaboration. In this way, categories could be created in an incremental way at each stage, looking to better integrate knowledge flows between a few specific teams or departments and for specific purposes. Departments that seem to have a pressing need to join up, as well as using relatively similar business processes and cycles, are the regional departments and those working on the most operationally-relevant areas: the regional departments (Central and West Asia Department, East Asia Department, Pacific Department, South Asia Department, Southeast Asia Department), RSDD, the Economics and Research Department, Independent Evaluation Department, Central Operations Services Office, and the Private Sector Operations Department.²¹

50. In terms of terminology and categories, there already exists a taxonomy relevant for this task in the eStar system where documents must be filed according to country, sector and theme. The priority should be to first 'tag' all documents according to the folders they sit in and then work to improve the accessibility of these departments databases to each other, as well as the ability to search across them. The external relation department is already moving towards a faceted taxonomy and a new search engine that will take advantage of that. Internally this is not yet the case; a tree structure taxonomy is likely to be sufficient. Tagging and metadata should be compulsory for internal documents that are considered ADB-wide relevant (or, at least, relevant to the other departments using the same taxonomy).²² The migration of ADB to the new SharePoint system would seem to be an ideal target date for the completion of the new taxonomy, in order to capitalize on the window for change it offers. After this has been done, a variety of technological and procedural measures could be built around the database (e.g., alerts, working with CoPs on sub-categories for sector knowledge) that could have significant benefits for coordination and effectiveness.

51. Improving the practice of **categorizing and tagging the knowledge, experience and expertise of ADB staff** would be a key way to improving interpersonal linkages and knowledge sharing.²³ It could be implemented in the existing database of ADB staff. There is an existing taxonomy for classifying the expertise of economists in the research department of ADB (drawing on an accepted external taxonomy), which was felt to be of use. Widening this practice to include other types of expertise, and operational experience, would seem to be potentially highly beneficial, and an accepted taxonomy for domains and countries of knowledge would ensure the consistency needed in order to make such a database searchable and hence useful.

²¹ Of course, some departments may need to keep some areas of their databases closed, for example, certain confidential information held by PSOD on private companies. However, this should only be the allowed when there are clear, legal reasons such as not to share information.

²² The survey shows support for making tagging compulsory, with 64% strongly agreeing, 32% agreeing, and 4% disagreeing.

²³ Although this received a slightly lower level of support than document storage and retrieval purposes in the survey, the average score was still firmly in between 'strongly agree' and 'agree' (1.6). We would argue that this slightly lower score was possibly a result of document retrieval being seen as the main purpose of taxonomies. We would argue nonetheless that the system for tagging staff knowledge is a crucial avenue to pursue for the reasons outlined. Some communication effort is likely to be needed here, however, in order to address what may represent a prevailing perception about what taxonomies 'should' look like.

52. Unlike taxonomies for documents, this measure would not require a large behavioral change in order to function properly; staff are already using their networks and contacts in order to locate relevant documents and to learn more generally, and this would make this process more systematic and comprehensive. It would also help with the issue of institutional memory, by making it easier to locate those individuals in the organization who may have worked on a region, country, or sector, but who may have moved through two or three new posts since working in the relevant department. A key element of this would be linking 'tagging' of staff knowledge and expertise to key processes (e.g., annual performance appraisals) and consolidating taxonomies between the other elements, which are linked in to this – for example, significant value would be added by joining the staff database to the project database, but consistency would need to be achieved between the list of sectors and themes in the project database and elsewhere.

53. Work on improving the **taxonomy of external publications** would not seem to be the best usage of time to improve the management of knowledge for external use and as such a taxonomy (of knowledge products) already exists. As far as our interviews could ascertain, departments generally do not use it, and the problem here seem to be more to do with providing sufficient incentives towards doing anything at all, rather than achieving consistency between what is produced (especially given the variation in demand between countries). Answers to this issue could be about institutionalizing elements of the existing taxonomy (e.g., requiring that certain types of publications are produced as part of any TA). However, even this is carried out according to the context-specific demands and aims of the different operational departments and to improve this practice they should look to retain ownership and hence possibly focus on home-grown initiatives and the 'carrot' rather than the 'stick' (e.g., quality support functions). On the other hand, there would be value gained from bringing greater consistency and agreement between the lists of 'topics' and 'sectors' used for external purposes, and the similar factors of any internal taxonomies.

54. Finally, it may be useful to provide a facility that allows teams and departments to create **flexible taxonomies** for their own specific purposes. Given the importance of nurturing ownership over knowledge management tools and procedures, it would seem to be a lost opportunity to deny staff the ability to systematize their organization, sharing and managing knowledge if they feel the need to do so. These taxonomies could take the form of lists, small tree structures as well free tags using clouds (e.g., folksonomies), and would be tagged when final documents can then be uploaded to the internal or external systems.

55. However, given the existing issues of multiple and overlapping taxonomies, there would need to be rules in place that ensured that these did not duplicate or over-ride other taxonomy efforts. The survey also displayed a degree of caution about allowing too much freedom for departments to have their own taxonomies.²⁴ It may be that taxonomies which are developed by a department should either have fixed time frames (e.g., a project-specific taxonomy), or be required to be integrated within other inter-departmental taxonomies.

²⁴ The questions about allowing CoPs the freedom to develop their own taxonomy, and on various actors being able to change, update and delete taxonomies, received the lowest average scores of 1.8 each, demonstrating that there may be some concerns with this. However, this nonetheless still represents an average of 'agree'. 60% of the online questionnaire respondents 'strongly agreed' and 32% 'agreed' with the statement that 'departments should be able to develop taxonomies (congruent with the corporate taxonomy) to capture and store for retrieval project-related documents such as back-to-office reports, sector studies, technical assistance reports, etc' (an average of 1.5).

III. CONCLUSIONS AND RECOMMENDATIONS

56. We have now set out what seem to be the key avenues for taxonomy development. In turn, each of these changes would help improve the storage and retrieval of documents and information, an efficient mapping of expertise within the organization, and create opportunities for greater collaboration between departments and units through the creation of a common vocabulary and way of working. As the literature highlights, it is unwise to attempt to externally or unilaterally impose a taxonomy on an organization and therefore the precise priorities for taxonomy development and implementation must be carried out within ADB through a process of both consultation and validation. However, we do offer some clear recommendations on how this should be carried out.

57. First, taxonomy development should be managed through a typical project management structure shown in Figure 8, whereby the Project Board chaired, for example, by the Director General of RSDD ensures that the benefits of the knowledge management strategy are realized. The Chair of the Project Board should make sure that the perspectives of users of the knowledge management products are met by the suppliers. The various members of the Project Board provide an assurance which does not require a day-to-day involvement in the project, but ensures that throughout the life of the project the quality of outputs and activities is maintained. The Project Manager is in charge of the day-to-day planning and management of the project outputs and activities as specified in stage plans. This will also involve the definition of the preparation, the discussion of the product and activity description required for the taxonomy activities.

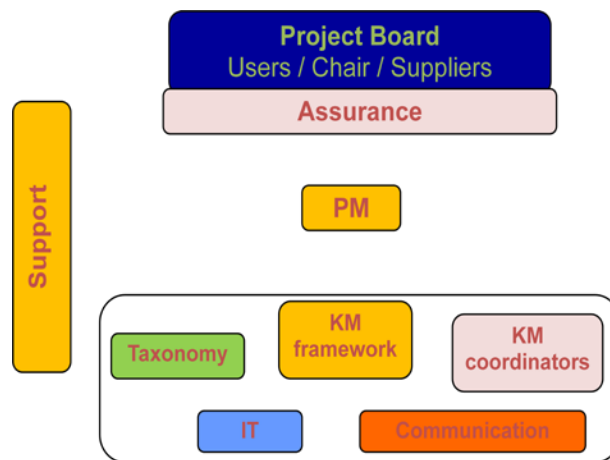


Figure 8: Project Governance Structure

58. The delivery of the taxonomy activity would have to start with a clear mandate to design an ADB overall corporate taxonomy and validate or merge existing local taxonomies. The mandate should also provide adequate financial resources to fund the scoping and design, consultation and involvement of key stakeholders in departments and units and the procurement of external taxonomy experts, or else train or hire ADB staff who will have the responsibility to maintain the taxonomies as part of a dedicated unit.²⁵

²⁵ 68% of the online questionnaire respondents 'strongly agreed' and 32% 'agreed' with the statement that 'the development of a single corporate taxonomy requires support from ADB's Management and Directors General.' 72% 'strongly agreed' and 28% 'agreed' that 'the development of a single corporate taxonomy requires the commitment of human, financial, and institutional resources.'

59. Secondly, with regard to the design, we would urge that taxonomy development proceeds in an incremental manner, looking to improve knowledge taxonomies in ADB in small, discrete steps. A more comprehensive, unified taxonomy may be possible further down the line, but in order to bring the organization along with the process of taxonomy development and implementation, it should not be attempted in one single step. Signals from our interviews suggest that change inside ADB tends to proceed through a process of dialogue that focuses very strongly on achieving consensus (rather than being driven by strong leaders). As such, the stalling of previous efforts to develop a taxonomy to cover all departments is not surprising, due to the swathe of separate issues which must be agreed between a multitude of departments and actors. It would be wiser to look to build consistency and utility into ADB taxonomies in a piecemeal manner, in order to allow focus on achieving agreement between a smaller number of departments on a small number of issues, at a time.

60. Thirdly, to this end, our recommendations for avenues for taxonomy development should serve as starting point for the taxonomy development project. They are based on a considered, independent process of research, consultation, and analysis about the needs and possibilities for taxonomies in ADB, as well as our appreciation of how to achieve change in ADB. The recommendations are:

- A basic country-sector-theme taxonomy to be rolled out first to all operational departments with compulsory tagging.²⁶
- Improved consistency and labeling of the database of ADB staff, tied in to key organizational systems and processes.
- Working to bring greater consistency between internal and external lists of sectors and 'topics'.
- A facility to allow for decentralized taxonomy development.

61. Fourthly, the taxonomy development should be treated as a key activity within a knowledge management project.²⁷ The taxonomy itself will not be the crucial 'bottleneck' in many instances and has to be developed in tandem with other work. Other work that seems particularly crucial for the success of taxonomies includes:

- ADB should develop an internal policy as to which documents can be considered final and ADB-wide relevant so that the staff will be guided in terms of tagging and adding metadata to those documents before uploading to the internal systems.²⁸
- Investment in IT and a corporate search engine is crucial. While the most advanced search engine will be useless in large organizations in the absence of a solid taxonomy, taxonomies lose their potential in the absence of a good search engine. Investments in the two areas have to therefore go hand in hand.
- Strengthening of the role of the Knowledge Management Coordinators is also important. 'Rolling out' any new taxonomy will require embedded staff with dedicated time for the task and taxonomies require a certain level of ongoing quality control.

²⁶ 64% of the online questionnaire respondents 'strongly agreed', 32% 'agreed' and 4% 'disagreed' with the statement that the 'tagging of ADB documents and knowledge products should be made a requirement for all staff.'

²⁷ As framed by ADB's Knowledge Management Strategy of 2004 and its bi-annual activity plans.

²⁸ 56% of the online questionnaire respondents strongly agreed and 44% agreed that an ADB-wide policy should be developed to define when ADB documents (e.g., memorandums, reports, project documents, etc.) and ADB knowledge products (e.g., publications, podcasts, multimedia materials, etc.) are office or department-specific or of ADB-wide interest.

62. Finally, it is important to develop a communication strategy to keep the staff informed about the various activities under the umbrella of the knowledge management project, and in particular for taxonomy development. Taxonomies can change working habits and require therefore to be supported by an internal communication plan to keep all stakeholders informed about the purpose of the taxonomies, the approach adopted to introduce them, progress, and what is expected from the audience. Lambe, (2007), suggests adopting concise, timely and context specific messages to demonstrate the benefits of the taxonomy in the daily work of the staff. Face-to-face interaction and small group discussions therefore work best.

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INTERVIEWEE INFORMATION

Interviewee Demographics

The ODI team interviewed 27 staff in ADB's Headquarters in person in Manila between 5–12 November 2010, and then 5 interviews with staff in ADB's resident missions, on the phone, between 20 November 2010 and 6 January 2011.

Gender Balance

Gender	Male	Female
International staff	20	7
National staff	3	2
TOTAL	23	9

Job Level

Classification of staff	Job Level											
	1	2	3	4	5	6	7	8	9	10	11	12
International staff	0	0	0	3	6	9	4	1	1	4	0	0
National staff	0	0	0	0	0	0	0	2	1	0	0	1
TOTAL	0	0	0	3	6	9	4	3	2	4	0	1

Time in ADB (estimated, Headquarters staff only)

Time in ADB	Number of Interviewees
1–5 years	8
5–10 years	5
10+ years	14

SEMI-STRUCTURED QUESTIONS

1. How long have you been working for ADB?
2. What improvement in knowledge management have you seen? What are the problems for sharing knowledge in ADB?
3. Please describe your role/day-to-day work?
4. How does your day-to-day work link with producing, sharing searching knowledge products? Please describe basic business processes, approval / sign off? To whom you talk for getting information on your work?
5. What are the systems that support you work? Do they work? What are the limitations?
6. What are the incentive to looking for / generate / share knowledge (e.g., reports, interesting articles, assessment, evaluations, etc.)? Funding? Promotion? Internal profile?
7. Are you using/accessing a taxonomy? Do staff make use of taxonomies? Who? Which ones? For what? Are you involved in building/setting up a taxonomy? Which one?
8. How do you see an ADB taxonomy: established and communicated top down, corporate and centrally managed bottom up, freedom to tags and use the cloud? In your opinion are sectors and themes key to linking regional departments horizontally? (Note: they do not have same structure.)

RESPONSES TO THE ONLINE QUESTIONNAIRE

The survey results from the online questionnaire circulated in January 2011 are summarized below. The full distribution of responses to each question follows.

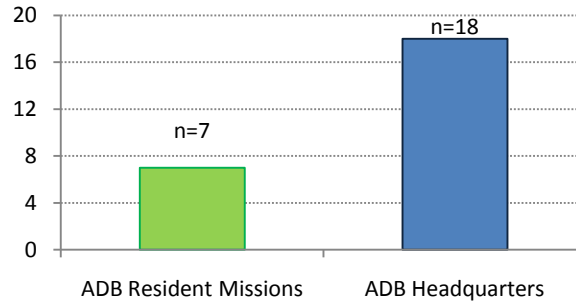
Question	Average Answer ²⁹
<i>1. What should be the purpose of ADB taxonomies?</i>	1.5
1.1 Storage and retrieval of (internal) ADB documents	1.4
1.2 Storage and retrieval of ADB knowledge products	1.4
1.3 Categorize staff expertise	1.6
1.4 Improve coordination across headquarters	1.6
1.5 Improve coordination between ADB's Headquarters and resident missions	1.6
<i>2. What should be the design of ADB taxonomies?</i>	1.5
2.1 A single corporate taxonomy for (internal) ADB documents	1.3
2.2 A single corporate taxonomy for ADB knowledge products	1.4
2.3 A corporate taxonomy that is flexible to new work	1.4
2.4 Departments able to create their own taxonomies	1.5
2.5 CoPs able to develop taxonomies for their sector	1.8
2.6 Teams, departments, etc. able to change and delete their taxonomies	1.8
2.7 A policy needed for determining documents of ADB-wide interest	1.4
<i>3. How to develop and implement ADB taxonomies?</i>	1.4
3.1 Involve Knowledge Management Coordinators in ADB's Headquarters and resident missions	1.5
3.2 Development requires support from management and directors general	1.3
3.3 Development requires human, financial, and institutional resources	1.3
3.4 Tagging documents should be compulsory	1.5
3.4 Train staff to tag documents	1.4
3.6 Keep staff informed of purpose and progress of taxonomy	1.4
OVERALL	1.5

Respondents

25 / 47 Knowledge Management Coordinators = 53%

²⁹ These were calculated by assigning the values 1, 2, 3 and 4 to the answers 'strongly agree', 'agree', 'disagree', and 'strongly disagree' respectively, and calculating the mean score for each question, as well as for the overall groups of questions. Answers were rounded to 2 significant figures.

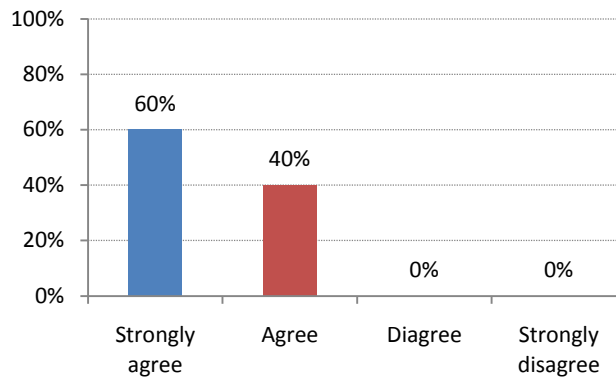
Are you based in a Regional or Resident Mission or Headquarters?



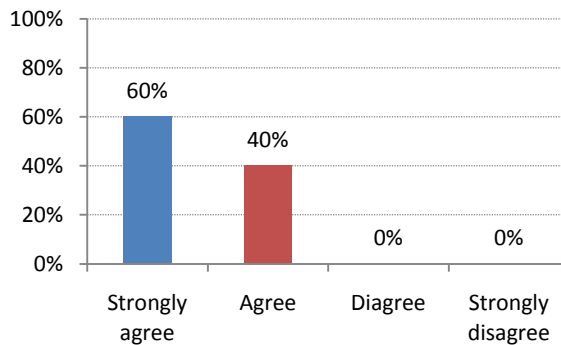
N=25

1. The Purpose of ADB Taxonomies: What should they be designed to do?

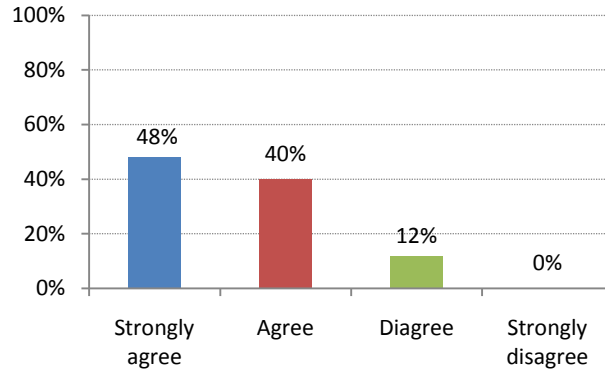
1.1 Taxonomies should help capture and store for retrieval and subsequent use ADB documents such as memorandums, reports, project documents, etc.



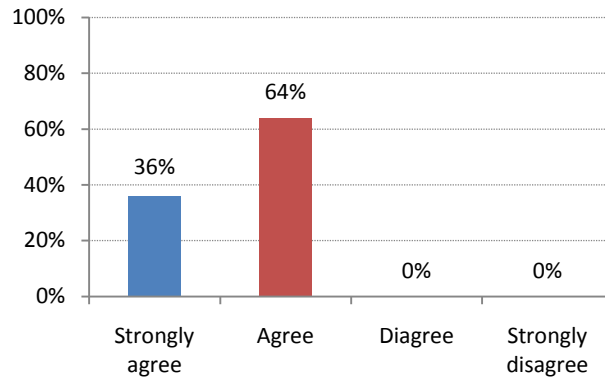
1.2 Taxonomies should help capture and store for retrieval and subsequent use ADB knowledge products such as publications, podcasts, multimedia materials, etc.



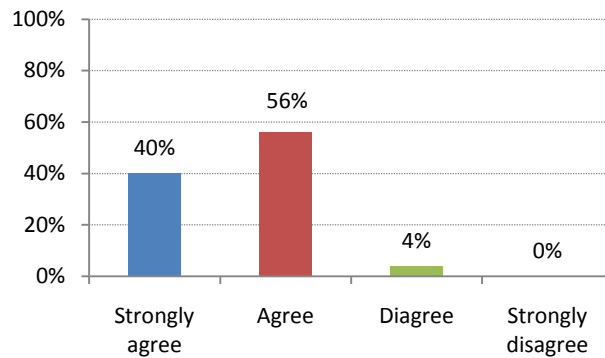
1.3 Taxonomies should help categorize the knowledge, experience and expertise of ADB staff, in order to improve interpersonal linkages and knowledge sharing.



1.4 Taxonomies should help improve working relationships and coordination across ADB's Headquarters.



1.5 Taxonomies should help improve working relationships and coordination between ADB's Headquarters and Regional and Resident Missions.



Additional Comments – Taxonomy Purpose Section

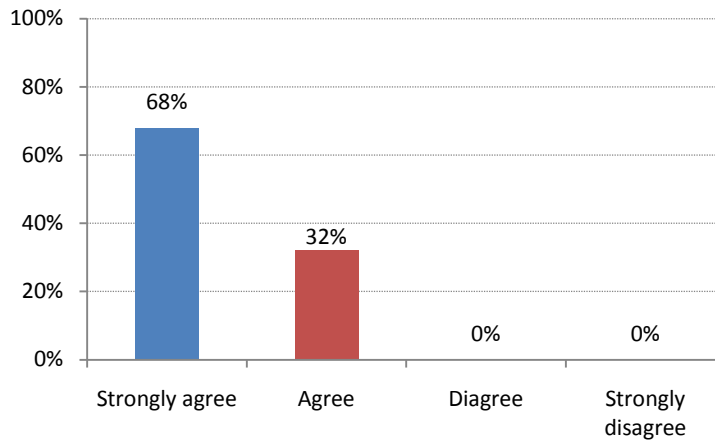
- The main purpose of the taxonomies should be to open up to all stakeholders the knowledge that is often stored in divisional silos. In particular, the sharing of knowledge that is generated in TAs should be a priority. This would greatly enhance knowledge synergies between ADB's Headquarters and resident missions.
- Organizations spend millions of dollars on management systems without commensurate investments in the categorization needed to organize the information they rest on. Taxonomy work is strategic work: it enables efficient and interoperable retrieval and sharing of data, information, and knowledge by building needs and natural workflows in intuitive structures.
- Taxonomies should be broad frameworks that allow more detailed development to respond to evolving needs, but without imposing restrictions that discourage innovation and creativity. These should be the basis for establishing agile structures and creating order to help the organization grow in information management.
- Resident missions need to be provided the fullest possible access to resources in ADB's

Headquarters in order to adequately function as some sort of mini-ADB.

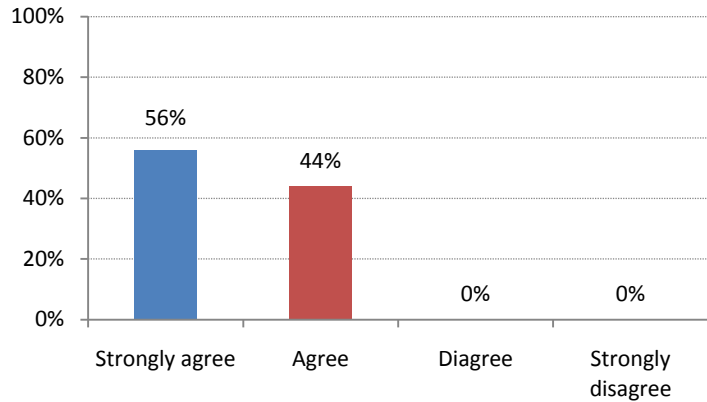
- Taxonomies would be a leveling off instrument in our pursuit of our knowledge mission at ADB.
- Have instituted guarantee handbook to maintain institutional knowledge of department.
- ADB has already done work in developing taxonomies, but many staff may not use it (being new) and are unaware how it could help their work. In any case, corporate taxonomies should be reviewed periodically to remain relevant.

2. The Shape of ADB Taxonomies: What should they look like?

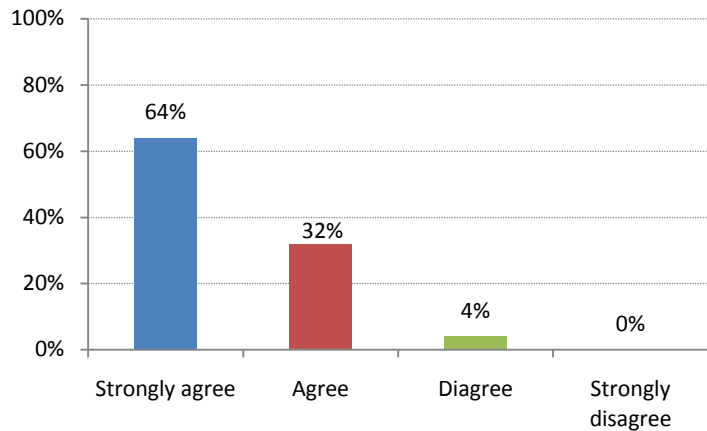
2.1 A single corporate taxonomy should be developed to classify ADB documents such as memorandums, reports, project documents, etc, where they are likely to be relevant across different departments.



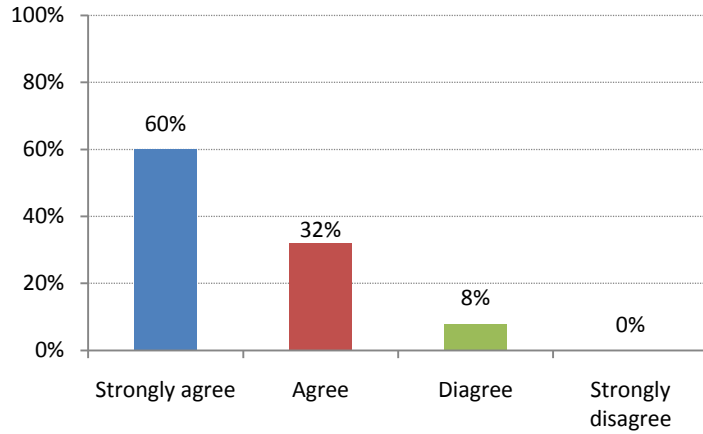
2.2 A single corporate taxonomy should be developed to classify ADB knowledge products such as publications, podcasts, multimedia materials, etc.



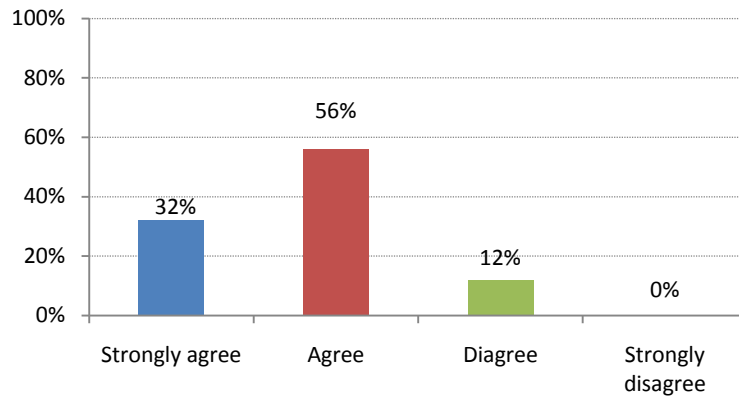
2.3 A single corporate taxonomy should be flexible: it should be possible to add or delete categories according to changes in the areas of work of ADB.



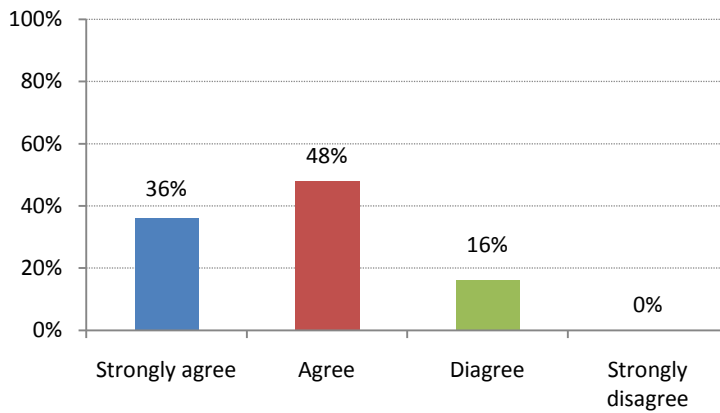
2.4 Departments should be able to develop taxonomies (congruent with the corporate taxonomy) to capture and store for retrieval project-related documents such as back-to-office reports, sector studies, technical assistance reports, etc.

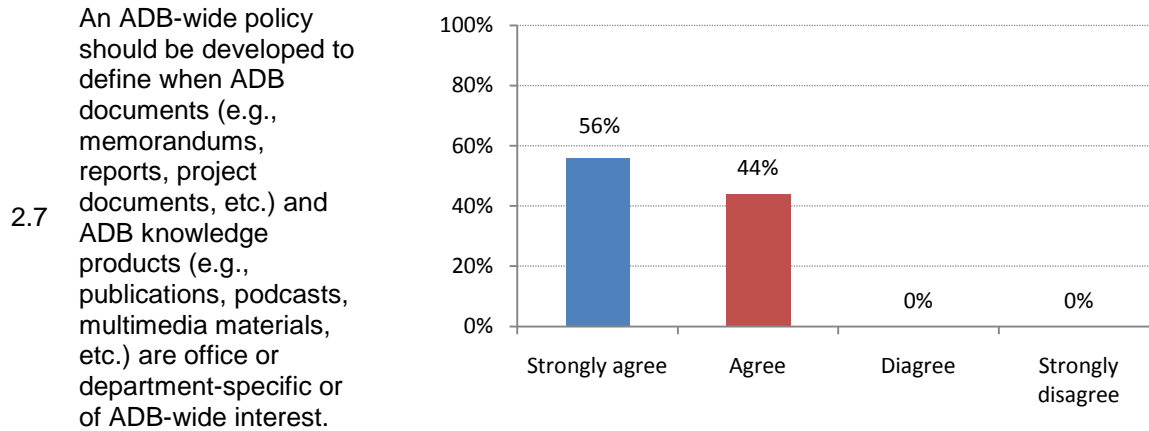


2.5 Communities of practice should be able to develop taxonomies (congruent with the corporate taxonomy) to support their sector and thematic work.



2.6 Offices, departments, and communities of practice should be allowed to update, change and delete the taxonomies they create.

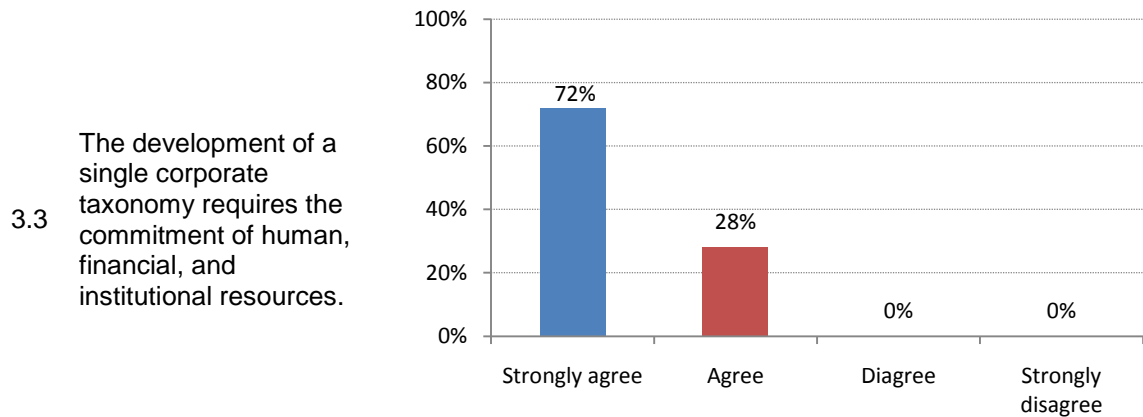
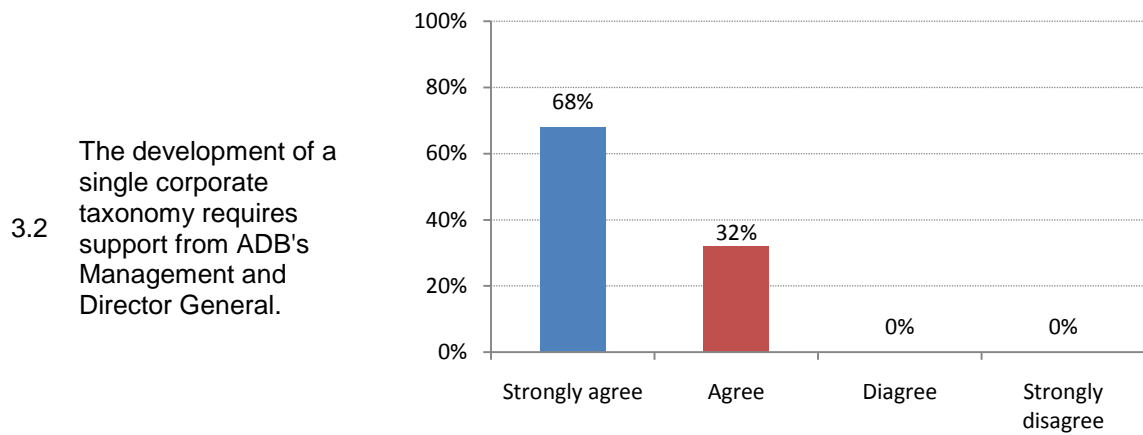
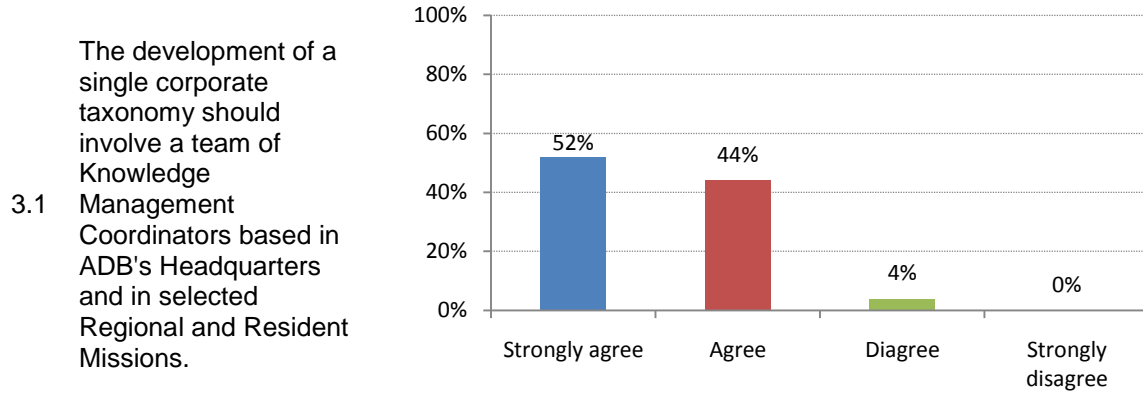




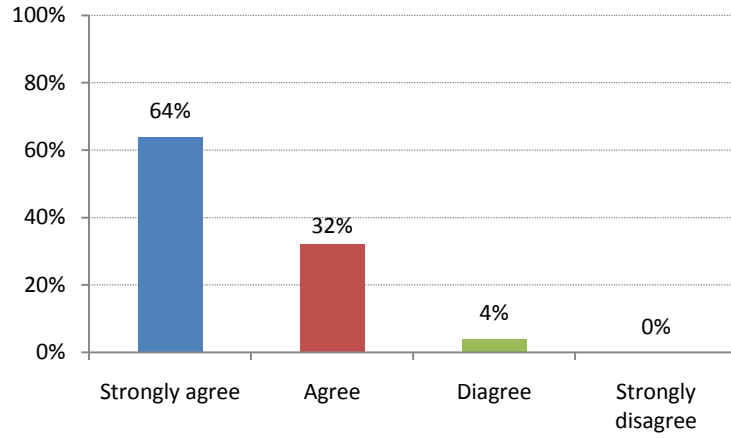
Additional Comments – Taxonomy Design and Shape Section

- The taxonomies should be corporate and should include all possibilities across departments and CoPs. In that way, there is little need for flexibility to change by work unit. The changes should be corporate to ensure consistency. No need for different departments to refer to the same categories differently.
- Creating a comprehensive corporate taxonomy may not be an easy task, so there would have to be room for flexibility. That said, a comprehensive taxonomy would save time and effort for individual departments to build taxonomies for systems they may develop. For example, OSEC has built IT systems to log and track documents routed through the secretariat, where a clear taxonomy would be very useful. It may also be useful to have a common taxonomy for filing in eStar across departments. For project documents, P3M would have developed a defined taxonomy across departments.
- CoPs should adopt the taxonomies created by the departments and need not create something of its own. It might add to confusion. Sector and thematic taxonomies adopted by the departments should be followed by CoPs. Only relevant departments should be allowed to update, change, and delete taxonomies. A central taxonomy officer should be informed by offices when deleting office taxonomies.
- In a large office such as ADB, it is difficult to achieve consistency due to its dynamic evolution of processes and the interspersal of functions. There should be a limit on how often a change will be made in major areas of concern to avoid confusion.
- The idea that information can be depicted as a tree is an old chestnut. With the advent of the internet, however, the need to classify and categorize it has become even more urgent: beyond parent-child hierarchies, taxonomic schemes can now depict networks of relationships, as well as their intensity.

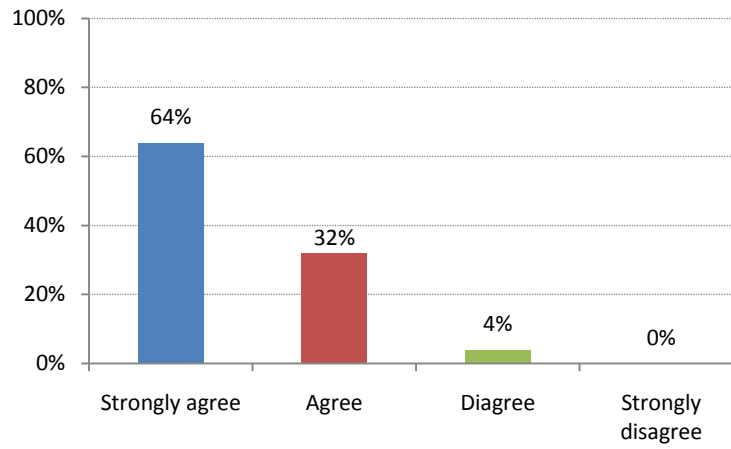
3. Implementing ADB Taxonomies: How should they be developed and managed?



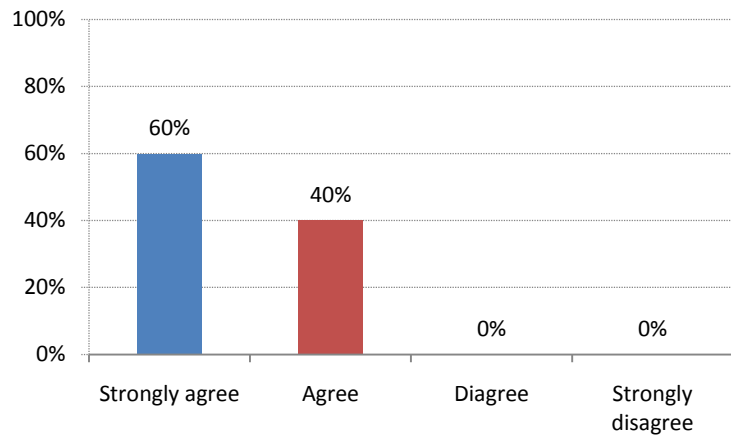
3.4 Tagging of ADB documents and knowledge products should be made a requirement for all staff.



3.5 Staff should be trained to tag ADB documents and knowledge products.



3.6 ADB staff should be kept informed of the purpose, progress, and development of different ADB's taxonomies.



Additional Comments – Development and Implementation Section

- Tagging of documents is essential for easy retrieval and future use. It should be incumbent on the authors of documents to create relevant tags. (This task should not be left to others, say the team in the Department of External Relations, or a consultant, to create tags for a document they may not know anything about.) For Board documents, we may consider having a box at the end of each document where the authors mandatorily indicate relevant metadata. It may not be very pretty to look at, but it could enable the person uploading the document to cut and paste metadata from there.
- The team composition should be based on the expertise and experience in taxonomy development, and not necessarily comprising the existing KM coordinators. This taxonomy development is a specialized field that requires expert facilitation.
- Resident missions need to have access to the new systems.
- The essential steps to taxonomy design are to (i) assign roles (and associated responsibilities), (ii) know your content, (iii) understand your business context and priorities, knowledge workers, clients, audiences, and partners, information systems and technologies, and limitations, and (iv) get started.
- All documents should be tagged prior to obtaining approval while in hard copy form and prior to posting on the website.
- Confidential documents should be taken into account.
- There was no study in the possibility of generating e-trash in e-filing. With this in mind, staff should be aware of what to upload, not to upload and be consistent in tagging.

COMPARATOR ORGANIZATIONS

As part of the study, ODI interviewed individuals in six comparator organizations to provide some insights through comparisons with existing taxonomy systems elsewhere.

The findings about knowledge management and taxonomies in each organization are as follows:

UNDP: UNDP makes use of an intranet (SharePoint), and partly an extranet platform (an extension of the intranet which can be used for collaboration with outside partners) known as 'teamworks' (which includes various web 2.0 elements). These contain a basic corporate-level taxonomy based on thematic classifications, the organization of units, geographic locations and types of resources. It is possible to propose new categories and use free text tagging. Teamworks have a small coordinating committee to normalize taxonomies and manage the tagging of documents. They are currently validating the taxonomy, with staff giving feedback on categories and proposing revisions or additions.

OECD: OECD currently uses three taxonomies. One for the library, one for the external website, and one for the publishing division (each covering slightly different versions of the 'topics' or 'sectors' worked on, along with country and department). Finalized documents are uploaded to an internal database when sent to committees for approval, however tagging is not compulsory and not generally well done, which limits its utility. They are currently carrying out a review of their knowledge taxonomies, with backing from a senior director.

Sida: Sida uses a central publications database, and have recently moved their intranet onto the SharePoint platform. On this, it is compulsory for documents uploaded to be tagged with an agreed taxonomy which sets out key themes (e.g., health) and methodologies (e.g., evaluation). The taxonomy is highly integrated into organizational processes. Learning is organized in Sida around these themes: every member of staff is categorized according to which of these topics they belong to, determined through job descriptions. These networks function as information dissemination mechanisms, as well as providing individuals for formal peer review and approval procedures. In the near future specific individuals with special expertise will have some of their time covered in order to contribute to the network.

ODI: ODI uses the SharePoint system as the intranet, and a separate system for classifying and uploading publications to the website. There is single subject taxonomy used for both internal and external purposes; however tagging is only compulsory for ODI publications on the website. The subject taxonomy was developed with first a list produced by the team responsible for uploading documents to the website, which then went through two iterations of consultations with research programs and revisions before being finalized. While tags had not previously been well applied, tags now give additional prominence to the work of researchers by enabling people to more easily find publications and have incentivized best practices.

GIZ (ex-GTZ): GIZ uses two taxonomies: first, it has adopted the (external) 'Thesaurus of economic and social development', and secondly its own 'GTZ-Wortschatz' (top terms and terms). These are integrated into their database, and also used for external publications, which have an additional 'themes' tag. The 'GTZ-Wortschatz' was developed through consultations with GTZ staff, by the planning department and the corporate communication unit. It is managed at the Headquarters level by a working group, which can modify the categories and terms where needed. GIZ are currently integrating the 'GTZ-Wortschatz' into job descriptions and human resource management processes, the address directory, and document management system.³⁰

³⁰ An international benchmark exercise conducted by the International Business School in 2010 has ranked GTZ (now GIZ) second place for its knowledge management strategy. The exercise has been conducted by analyzing 300 indicators and by comparing 11 international consulting companies including, for example, SAP and Accenture. GIZ had achieved first place in 2008 and third place in 2006. According to Jan Schwaab, Director of the Knowledge Management Division of GIZ, a key is the good linkages and sharing between personal and contracting processes. However, Schwaab added, GIZ could still improve on how the current strategy is applied across all

OneUN: Discussions held with a OneUN country office (roughly 600 staff) reveal some of the dangers of not adequately developing integrated taxonomies. During the development of the organization's intranet system, a decision was made not to include a taxonomy or tagging of documents, for fear it might discourage use of the system. The organization now runs the risk that poorly named documents will not be found in searches. It may also face difficulties in linking up its intranet to the external environment. Work to develop a new taxonomy is underway.