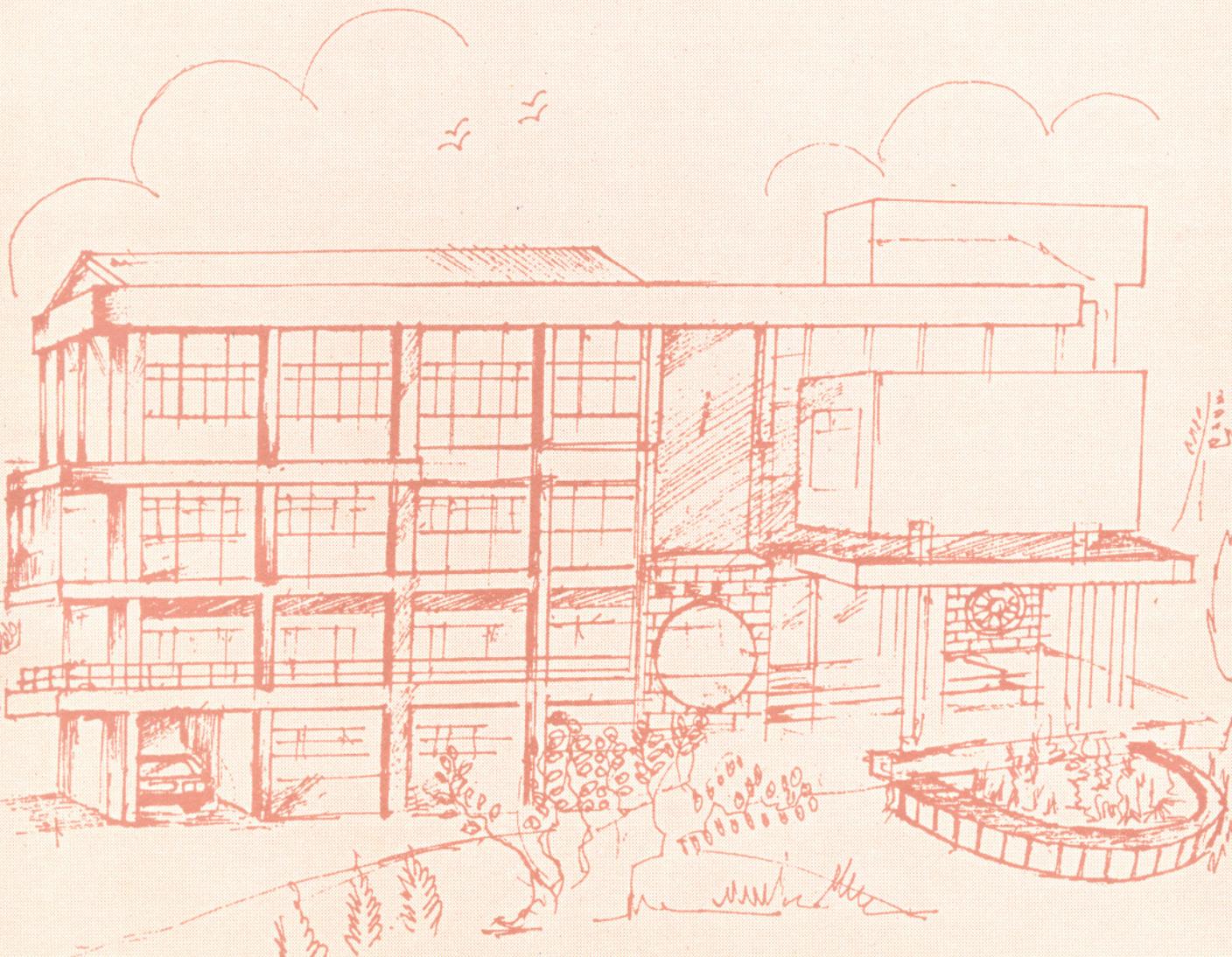




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Information logistics Issues In Outsourced Knowledge Operations



Information logistics Issues In Outsourced Knowledge Operations

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Information logistics issues in outsourced knowledge operations

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Abstract

Business Process Outsourcing (BPO) has transcended its origins as low-cost technical operations to cover increasingly complex business processes, such as credit card processing, customer interaction and data mining & analysis. This is largely driven by the twin engines of search for strategic competitive advantage, and ever-increasing developments in information technology. As BPO firms plan to execute various types of processes in an offshore model, they face a host of decisions regarding logistics of different resources. Amongst the most crucial resources for these processes is information availability (termed for the purpose of this paper as Information Logistics). Information is the vital connecting link between the client and the human and locational resources of the BPO firms.

This paper is an exploratory **study of information logistics of BPO firms at different levels of the knowledge continuum**. Through a case study approach, it sets out the issues in managing information in different contexts of Direct Customer Interaction, Routine back-office, and Analytics processes. By analyzing communication, information retrieval and information distribution activities, it develops a matrix of information logistics against knowledge level of operation. This is considered to be a useful start point for a deeper exploration of information logistics and thereby, cost issues for each type of outsourcing.

1 INTRODUCTION:

The BPO sector in India has grown significantly in the recent years, and industry analysts such as Gartner, and IDC are forecasting astronomical growth in this sector over the next five years. Companies have long outsourced manufacturing operations and other tasks such as IT maintenance or software development. However, of late, there has been a steady movement along the knowledge continuum in the direction of increasing expertise and information-intensiveness in the nature of the work that is being outsourced today. The knowledge continuum can be thought of as having a 'data origin' and a 'knowledge end' which service the decision makers within a corporation [3].

Logistics has become an increasing area of strategic concern for firms [5, 6, 7, 13, 17]. Acknowledging the dramatic changes in the economy, which has become more information intensive, more global and more dependent on technology, several authors, both inside and

outside the logistics discipline, have indicated the importance of logistics as a source of sustainable competitive advantage [2, 9, 15, 17, 18].

2 OBJECTIVE:

The outsourced business processes are information-intensive (the primary inputs and outputs both being in the form of information), and lend themselves to the study of logistics issues related to information availability, flow and storage. This perspective is referred to, for the purpose of this study, as *information logistics*. Therefore, this paper is an exploratory study of the information logistics implications for various types of outsourced processes along the knowledge continuum. A classification of various outsourced processes with respect to information logistics is attempted. This framework would help understand the cost and effort involved in executing the various types of outsourced processes.

3 LITERATURE REVIEW:

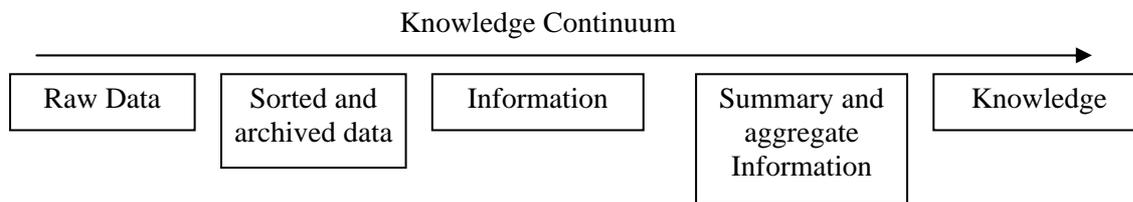
3.1 Business Process Outsourcing:

Business process outsourcing occurs when an organization turns over the **management and optimization** of a business function, such as accounts payable or purchasing, to a third party that conducts the activity based on a set of predetermined performance metrics. Though some forms of BPO may include both IT management and business operations, the term BPO primarily is about turning over functions such as payroll, accounting, billing or even real estate management to a third party. Though these business processes may depend on IT, they are separate functions from core IT operations, such as data center activities or network management [8].

Initially, offshore outsourcing was restricted to fairly technical tasks such as database tuning and data scrubbing, which had no strategic implications. However, there has been a steady movement along the knowledge continuum in the direction of increasing expertise and information-intensiveness in the nature of the work that is being outsourced today[3]. The different types of knowledge work that go into a BPO can be broadly categorized as [16]:

- ◆ **Data entry and conversion** which includes medical transcription
- ◆ **Rule Set Processing** in which the information worker makes judgement based on a set of rules provided by the client.
- ◆ **Problem solving** in which the information worker has more discretion; the rules here are fluid and less amenable to structuring than in the rule-set processing genre.

- ◆ **Direct customer interaction** in which the information worker handles more elaborate interaction with the client's customers.



- ◆ **Expert 'knowledge services'** which require specialists and are similar to services offered by consultants.

Figure 1: The Knowledge Continuum

3.2 Logistics Management:

Logistics Management is defined as “that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption in order to meet customers’ requirements”[1, 12]. This definition includes the flow of materials and services in both the manufacturing and service sectors. Logistics is dependant upon natural resources (land, facilities, and equipment), human resources, financial resources, and information resources for inputs[11].

This paper concentrates on information resources as inputs to logistics management. Information Logistics aims to deliver the right information to the right person at the right time[14]. The challenge, and opportunity, for new information and communication technologies is to make this happen. Information logistics consists of communication, information retrieval, and information distribution[4, 10]. By its very nature, information logistics comprises integration activities and is well supported by IT tools.

A study of logistics issues is crucial for effective execution of any process. As BPO processes are information-intensive, there is a need to study the information logistics issues faced by various types of outsourced processes. Identifying different logistical issues at different levels of knowledge work along the continuum provides an useful starting point for a more detailed examination of the information logistics at each level of operation.

4 METHODOLOGY:

A multiple-case design [19] is used to bring out the logistical issues in different outsourced processes. The various types of outsourced operations covered in the cases are based on Sec3.1 above. Three types of operations, (namely, voice, non-voice, and expert services) - in different outsourced organisations in Bangalore are studied to bring out information logistics issues. In all the cases, the primary source of data is semi-structured interviews with various process managers associated with the business processes. The interviews are supplemented by internal documents e.g. process reports wherever available. The latter source of data is used for confirming and validating the information obtained through the interviews, thus fulfilling the purpose of triangulation.

5 CASE STUDIES¹:

5.1 Case 1 – An outsourced Direct Customer Interaction : Insurance Call Centre

A case of a call centre in Bangalore for a UK based Insurance Company is examined. This customer interface process deals with routine voice and non voice queries from the customer. It consists of 100 persons (referred to as process agents) handling calls.

Types of activities handled

The inbound calls would either require servicing or sales.

Service: The servicing query involves activities like making changes to a policy, issuing a fresh quote or cover notes for the policy. In case of an exception or clarification required, a note is kept by the agent on the policy account stating the status of the problem resolution.

Sales: After the closure of the servicing activity the call centre agent could then proceed to take up sales activities which consisted mainly of either upselling or cross-selling of existing policies. This centre does not originate sales calls (which are otherwise called outbound calls in the BPO industry).

Processing of a non -voice query in an insurance call centre: The call centre also handles non-voice queries, which may be by mail or e-mail. Both the cyber and physical mails are forwarded by the UK office and processed in a given turnaround time.

¹ Please note the usage of the following terms in the case descriptions:

- Client – Outsourcer i.e. organization whose business process is outsourced.
- Provider – Outsourcee i.e. who is the business process vendor for the outsourcer.
- User – Customer of the outsourcer.
-

Process flow

Processing of a voice query in an insurance call centre: The user first initiates a voice query when he calls one of the toll-free numbers that is available with him. The “cloud” (exchange) at the client end then processes the call, and routes it to one of the three call centres. The UK based life insurance company has three call centres - a fully owned and managed centre in the UK, and two more (Pune and Bangalore) managed by the outsourcing vendor. Based on the availability of personnel at the call centres and the skillsets of these agents, the call is routed to the appropriate centre. In the centre the call is then serviced by one of the agents.

Security: There are procedures for the verification of each call. The agent has to ensure the bonafides of the policy holder before processing the call.

Exception handling during the calls: Since the activities handled in this call centre are largely routine activities, most of the scenarios can be anticipated by extensive process detailing. In case of doubts of how to process a particular query, the onsite manager usually has the expertise to resolve the query. Some queries are deferred as they have to be referred to the parent organization or an UK underwriter.

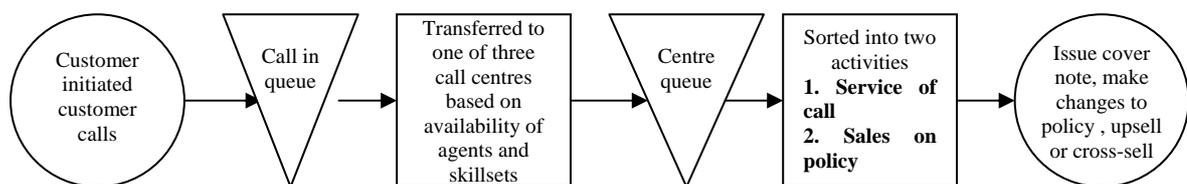


Figure 2 : Flow of information in a voice query in the call center

Performance

The detailed call receiving process, which has about 45 questions to walk the customer through fully or partially, has to be completed within a maximum of 7 minutes. There is a Service Level Agreement (SLA) regarding the time in which an agent picks up the call. The target given is 20 seconds.

Service level agreements: The performance of the call center is assessed on the basis of

- Revenues generated for the client
- Turnaround time for processing a call – 7 and 12 seconds respectively in the present case
- Average and maximum time duration of calls – 7 minutes for voice queries and 48 hours for non-voice
- Abandoned call rate– number of calls dropped after being routed to the centre

- Call Answer rate- dependent on abandoned call rate as well as the maximum time duration of each call.

Quality checks and controls: Query resolution being an oft encountered task in customer interface, strict quality is introduced to ensure agent compliance with the given script. Any agent has random checks by quality manager on four of his total calls in a month. Apart from that, there are periodic random checks by the UK office. All calls are recorded, and are required to be stored for a year in case of complaints or litigation.

Information Logistics implications:

The process flow clearly shows that there are queues and the case study description shows that the entire customer interaction has to be satisfactorily closed in seven minutes. This along with the SLA requirements of the call answer rate and abandoned rate highlight the importance of “communication” as all calls are serviced in real time due to the mode of operation. This also necessitates ensuring adequate bandwidth as well agent time to ensure that maximum number of queries is serviced.

- ◆ Communication: Very important as real time
- ◆ Information retrieval: Very important
- ◆ Information distribution: Client driven

It is necessary for the agent to be able to access latest account information as well as policy related information to ensure successful servicing of the call. Hence, sharing and retrieval of information assume significance. Since the agents respond to users on the phone, this information retrieval needs to be near instantaneous. All information required for closing a call is supplied by the client.

5.2 Case 2 - Outsourced Data Transformation : Credit Card Centre

The second case studied involves a credit card processing centre.

Types of activities handled

This centre at Bangalore has about 25 agents working on fourteen different kinds of activities concerning back end processing of credit cards. These activities consist of credit card application form filling, which is primarily a data transformation job. Activities like new credit card issuance, and account closure consists of operations based on a set of rules clearly laid out by the client, and generally do not involve much discretion of the provider. However, some activities like risk sorting, and collections require more decision making by the provider, and could be classified under the Problem Solving category outlined in Sec3.1.

Process flow

The non-voice operations are largely constrained by the availability of online application, which is managed at the customer end. The process is triggered off by Bangalore centre receiving scanned documents, emails or physical mail. The agents generally use these as inputs to their processes. The process flow is represented in Fig 3. The activities handled by this process are largely routine activities, and are amenable to extensive process detailing.

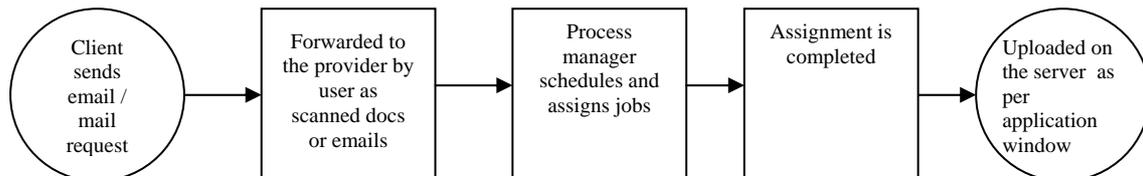


Figure 3: Flow of information in an outsourced non-voice operation

Performance

Performance measures are agent productivity (i.e. time taken per application), and quality (i.e. number of errors made by an agent in a batch of application processed). Turn around time of a batch of work is also tracked.

Information Logistics implications:

Implications are based on the three aspects of communication, information retrieval and information distribution. It is found that in this case, real time information exchange is not critical. Information retrieval and updation of databases is important, but that too is not required at real time. Since these are activities are routine, well defined and process driven the information distribution aspect is provided by the client. All forecasts and required information is given by the client.

- ◆ Communication: Less important as batch mode operation
- ◆ Information retrieval: Less important
- ◆ Information distribution: Client driven

5.3 Case 3 - A captive Data Analytic centre for a multinational company

A case of a captive offshored Data Analytic centre in Bangalore specializing in Data Mining and Analytical Modeling is examined.

Types of activities handled

The kinds of analysis projects taken up are - Marketing Analysis, Risk Analysis, and Design strategies for the parent organization. The work consists of preparation of analytical models, preparation of analysis reports etc.

Process Flow:

Processing of a query received by a Data Analytic Centre: The process flow in a captive offshored Data Analysis centre may be summarized by Fig 4 below:

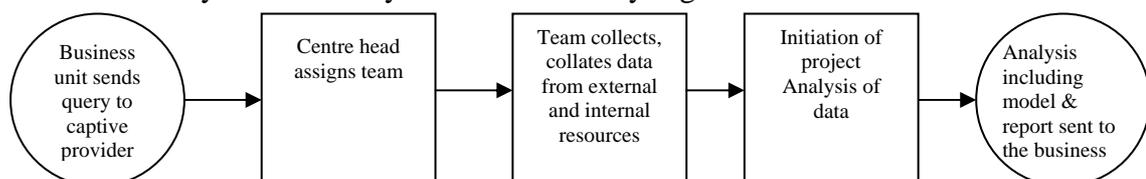


Figure 4 : The Flow of information in an offshored captive data analysis center

The operations are scheduled in a project format. Each query, after being qualified, results in a distinct project initiation. Effort estimation for the same is done, and ratified by the internal customer. During the project there is a lot of interaction between the internal customer and the offshored centre, as the latter has to anticipate information requirements and get it from the internal/external customer. The offshore centre usually has remote access to the internal customer's computing infrastructure. Decisions regarding project staffing, scheduling, information flow and storage are all taken by the offshored centre.

Security: Analysis is based on critical data related to the organization and its customers, hence it is dealt by a captive unit of the organization, and not let out to third-party providers.

Exception handling: Since the activities that are handled in this centre are diverse and varied, typical scenarios cannot be anticipated, and extensive process detailing is not possible. In case of doubts of how to process a particular query, the managers usually have expertise enough to decipher the request and design the solution.

Performance:

Performance measurement is very difficult in this case. Generally, timeliness of a project and suitability of the solution provided (i.e. customer satisfaction) are some important measures.

Quality checks and controls: The nature of work being varied, it is very difficult to arrive at SLAs of any sort. Hence, no SLAs exist. However, strict quality checks for errors and timelines are enforced in the projects undertaken.

Logistics implications:

In this case study the most important aspect is the information distribution. Though the client outlines his basic problem and some data when he seeks the provider's services, the latter has to anticipate and obtain additional data either from its client or its customers in order to come up with a solution. Hence, the information logistics involved in this is very high. Demand forecasting is done at the provider end. Communication and information retrieval is not online and not directly client related. This lowers the importance of both the factors.

- ◆ Communication: Less important as no real time operations.
- ◆ Information retrieval: Less important
- ◆ Information distribution: Provider driven

6 ANALYSIS:

Based on the case studies described above, a comparison of information logistics implications for various types of outsourced processes is summarized in the Table 1 below.

Process types	Information Logistics requirements		
	Communication	Information Retrieval	Information Distribution
Direct customer interaction	<ul style="list-style-type: none"> • High level of integration between the client's system and the provider's. • Two-way communication required on a real time basis 	<ul style="list-style-type: none"> • Very high speed required. Crucial for the process. • Standardised information made available by client as a database 	All information supplied by client i.e. client driven
Data entry and conversion	<ul style="list-style-type: none"> • Limited integration between the client's MIS and the provider's. • Data transformation at the provider's site and uploaded on to the client's systems in batch processing mode. 	<ul style="list-style-type: none"> • Information retrieval speed is not crucial • Standardised information made available by client on easily accessible databases 	All information supplied by client i.e. client driven
Rule-set processing	<ul style="list-style-type: none"> • Limited integration between the client's MIS and the provider's. • Processing at the provider's site and uploaded in batch processing mode. Clarification in specific cases 	<ul style="list-style-type: none"> • Information esp. rules retrieval speed is important. • Standardised information made available by client on easily accessible databases 	All information supplied by client i.e. client driven
Problem solving	<ul style="list-style-type: none"> • Substantial integration between the client's MIS and the provider's. • Operations at the provider's site and uploaded in batch processing mode. • More interaction for purposes of clarification. 	<ul style="list-style-type: none"> • Information retrieval speed is not crucial • Basic information made available by client on easily accessible databases 	• Most of the information supplied by client.
Expert 'knowledge' services	<ul style="list-style-type: none"> • Limited integration between the client's MIS and the provider's. • Operations at the provider's site and then uploaded in batch processing mode. • More interaction for information collection and clarification. 	<ul style="list-style-type: none"> • Information retrieval speed is not crucial • Basic information made available by client on easily accessible databases 	• Provider to anticipate information from the client.

Table 1. : Information logistics issues in outsourced process types

The above table for various outsourced operations may be plotted on a graph with axes as : quantum of information logistics vs. knowledge, as shown in Fig 5². No real time

² Not to scale.

communication requirements, speed of information retrieval not being critical, and information distribution done entirely by the client has been classified as low information logistics requirements. Real time communication, and speed of information retrieval being critical, and information largely required to be anticipated by the client has been classified as high information logistics requirements. This explains the continuum represented by the Y-axis in Fig 5. The X-axis represents the knowledge continuum, with a data origin at the extreme left, and knowledge at the extreme right. The various outsourced operations discussed in Sec 3.1 are positioned as shown below.

As depicted by Case 1, Direct Customer Interaction or call centre kind of operations have near real time information requirements, and hence are very high on Information Logistics issues, but being routine jobs are low on the knowledge factor. Non voice operations like data entry and rule set processing referred to in Case 2, are client driven routine processes operating in a batch mode; hence, they are low on information logistics issues as well as knowledge requirements.

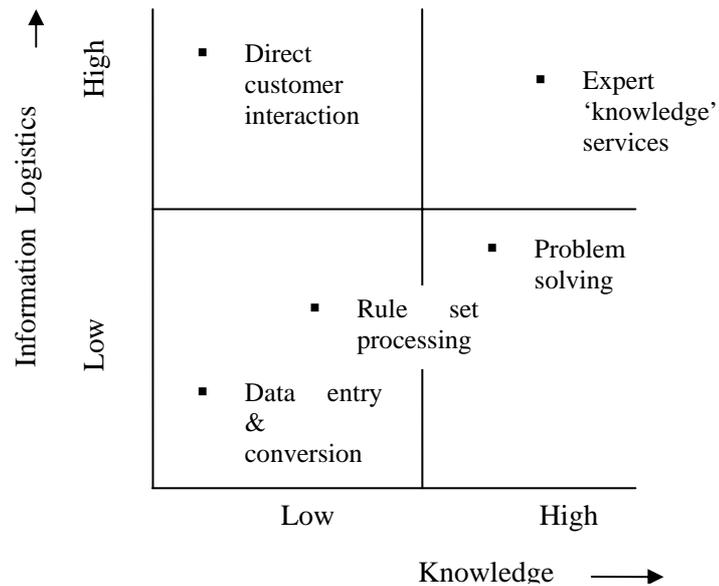


Figure 5: Information Logistics and Knowledge Matrix

Problem solving operations e.g. risk sorting in Case 2 are high on knowledge requirements, but being offline and client-driven are low on information logistics issues³. Expert services as depicted by Case 3, are high on both knowledge and information logistics requirements.

The cost of an activity is the direct result of the consumption of resources[4]. In the current context, one of the important resources is information . Therefore, the processes high on information logistics imply higher cost and effort of execution.

7 CONCLUSION:

This study classifies the various types of outsourced operations based on their information logistics requirements. The information logistics classification framework could be useful for understanding cost and effort involved in execution of various types of outsourced processes. This study also indicates that operations that are low on the knowledge scale can use process modeling to take care of information logistics issues.

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³ This is however, case specific. If the problem solving process in question requires information anticipation by the provider, then it could also be high on the information logistics scale, and in the same quadrant as Expert Services.