

IT Enabled Strategic Outsourcing: Knowledge Intensive Firms, Information Work and the Extended Organizational Form

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In the early 1900s, the Ford Motor Company would not have known what a T1 line was. If somebody had suggested to the senior managers at Ford that a T1 line would one day have something to do with who would manufacture the tires on Ford's cars, they would have been shown the door – for this was a time when the Ford Motor Company bought a rubber plantation in order to control the production of tires for its cars. Before the century ended, T1 lines not only determined who manufactured Ford's tires but also when and how frequently Ford was kept supplied by its partners. Contract manufacturing is a mature business model that has been deployed by many firms that face long and complex supply chains. IT outsourcing began with the outsourcing of data centers and data processing and has since grown to include the outsourcing of application development, data scrubbing and off site archiving. The most recent wave of outsourcing, one that is beginning to impact the nature of the modern firm itself, is the outsourcing of tasks that were once thought to lie at the core of the firm – the business processes.

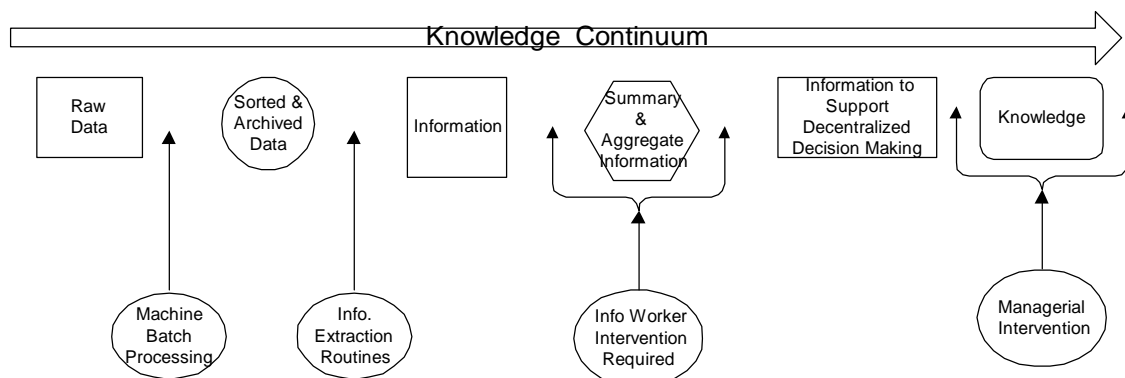
Business process outsourcing (BPO) began with the setting up of captive service centers by large transnational corporations. These centers, such as the ones set up by Citicorp and American Express in India, began by executing enterprise-wide operations that involved the conversion of data from one medium (such as documents) to another (digitized data in corporate databases). These operations were human intervention-intensive and required information workers to transform data into information and then into knowledge that could support managerial decision making. The nature of the operations were such that several information workers read data that resided in documents (vouchers, payment receipts, claims etc.) which were either not recognized by computers or required some measure of human interpretation and judgment before they could be translated into a format that could be processed by computers. These workers then translated, transcribed, and restructured data from one form to another. The data was then fed into a computer and integrated with the enterprise wide information systems so as to be used by Decision Support Systems (DSS). As the nature and extent of demands made by middle and senior managers on the corporate information systems became more extensive, the extent of human intervention required in the decision making process became greater. Companies such as American Express and Citicorp started moving more and more of their information extraction and reporting tasks overseas. Two factors that made this possible was the convergence in corporate computing platforms and the rapid advances made in communications technology. As corporations standardized on a few enterprise wide platforms (such as Relational Databases,

networking standards etc.) and with the availability of software tools that made it easy to port large data sets between dispersed information systems, the flow of data and information between geographically dispersed branches of the same corporation became a viable and nearly costless option.

As the flow of data between computers that talked to each other increased, so did the extent of human intervention and the degree of expertise required (of the information worker) to transform data into information. As a result, the costs of providing accurate and timely information to support middle management decision making increased by orders of magnitude. Corporations were faced with a two pronged cost escalation – they had to hire a greater number of information workers and at the same time ramp up the expertise levels of existing information workers who provided operational support to the managers. The move to a centralized operations factory in a lower cost labor regime was an obvious response to the cost frontier faced by these corporations. Hong Kong Shanghai Bank Corp. for instance, has an office in India handling back office work which employs about 1000 information workers, and HSBC plans to triple this office size in the near future. Companies such as British Airways have moved many of their financial and accounting functions to their offshore offices in countries such as India (and Ireland) while America Online’s customer service operations are supported from India. Initial reports suggest that some firms benefit to the tune of up to 60% cost savings in these lower wage markets.

The Knowledge Continuum:

There is a creep up the information ‘food chain’ that we are now witnessing in the outsourcing of work to offshore service farms. To understand this, let us first investigate the idea of a *Knowledge Continuum*. As raw data is transformed into knowledge that can support decision making, intervention by information workers is needed at various levels to convert, translate, transform and validate the data that is fed into corporate information systems. Information workers play a key role in extracting information that is required to support managerial decision making. In this case, the information worker is called to do those tasks in response to infrequently occurring information needs or where the information need is sufficiently unstructured for it to require human intervention as opposed a routine that can be run off a computerized menu. The knowledge continuum can be thought of as a having ‘*data origin*’ and a ‘*knowledge end*’ which services the decision makers within a corporation.



Initially off shore outsourcing was restricted to fairly technical tasks such as database tuning and data scrubbing (weeding out errors from large transactional databases) which had few if any 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. This is more typical of firms that set up shared service centers (captive service hubs) than of those that outsource operations to a third party service vendor. American Express, for instance, set up a shared service center in New Delhi, India in 1994. The early work that was shipped to the center consisted mostly of document reconciliation, vendor payment and card member receipts. These processes were initially migrated on a small scale and as the center's process production capability matured, they were migrated on a larger scale to New Delhi. [Girish Mehra](#), VP and Regional Financial Controller, Latin America for American Express who has worked in the center in India and managed the migration of several processes to the center, says "we began with processing vendor payments, receipts and account reconciliation work and as we achieved process production capacity with quality levels that could scale up. We moved to take on the work for the entire Asia Pacific region consisting of the ASEAN nations, Japan and Australia and over the last few years we have successfully transferred processes from Europe, US and Latin America into India." Processes that migrated to the Indian center became increasingly information-intensive. The center provides information support, analysis and MIS support in the form of producing monthly profit and loss statements and revenue and profitability analysis for Asia Pacific and now, Latin America. The center hired MBAs from the best Indian business schools and Chartered Accountants (CPAs) to do financial analysis and accounting. The center does a lot of accounting work, such as preparing fixed asset entries, recording expense and revenue transactions, and accounting for inter-company transactions, for the Asia Pacific region including Japan and Australia. Wherever there were local reporting requirements these were handled by the regional offices. The MIS support team in Delhi has access to all the electronic databases of the firm and the MIS specialists are constantly in touch with the CFO's offices in each of the markets (countries). The CFO's office may request the center to do an analysis of the operating expense and yield on card member balances. The center's MIS support team then does the required analysis and provides the required reports. Since there is standardization of corporate client-side computing platforms resulting in the firms within the region using the same set of PC-based tools, it is easy for the team to electronically relay the required information to the local offices. Mehra says that the MIS support delivery processes are now mature and stable, thanks in part to the satellite links that have been put into place by American Express linking the Delhi center with the worldwide information hubs of the company. Thus the nature of the work outsourced to this service hub has strategic implications for the corporation and requires the integration of the information systems of the shared service hub and the regional offices that the hub supports.

Revenue Distance

To understand the migration path of processes as well as the logic of process transfers to centralized service farms it is necessary to look at a related concept – the idea of *Revenue Distance* of a process. The Revenue Distance of a process can be described as the ‘distance’ between the locus of revenue capture by a firm and the process that supports the capture of revenue. The revenue distance then is a measure of the revenue contribution of the process and can be understood as a combination of two elements. The first is the extent to which a process contributes in creating value for the customer and the second the extent to which the process contributes in monetizing (appropriating or capturing) the value that a firm creates for its customers. In the financial services industry for instance, high levels of competition make it necessary for firms to be able to create new sources of value and strengthen the means of monetizing this value. The ‘finished product’ that is delivered to the customer, the work in process, the inputs and raw materials are all information flows. Several processes are braided together to calibrate and customize the information, validate it, ensure legal compliance to create a revenue flow from or to the customer (for example in the case of investment products) and the resulting financial service is delivered to the customer. Processes that help in monetizing the value would typically create trust, offer the consumer customized interactive experiences calibrated to her needs which in turn would create switching costs, and erect barriers that would be costly for competition to scale if it tried to acquire the firm’s customers.

If all the processes that support the creation and capture of value by a firm are ranked in the order of their criticality, where the most critical process are located closest to the point of revenue capture while the least critical processes are care located most distally from the point of revenue capture, the least important processes tend to be the ones that are outsourced first. In other words, processes with the greatest Revenue Distance are the first to be outsourced. Initial evidence from our field research points to two attributes of these processes: the extent of analysis and expertise required of the information worker (who operates the processes) increases with decreasing revenue distance. For instance, a process that requires an information worker to read an invoice or a billing claim and key it into a database (so the payments to the vendor can be automated), requires relatively little expertise on the part of the information worker and can be executed routinely by referring to a set of rules. The revenue distance of this process from the locus of revenue capture for American Express tends to be substantial. On the other hand, the information worker who prepares reports and analyzes financial performances information such as the operating expenses and customer balances, computing the yield on different financial products, needs to have considerable expertise and the ability to analyze and decide based on his understanding of a complex set of rules.

The migration path of processes to a centralized hub usually begins with the most distant processes first and traverses the path of decreasing revenue distances. This trend is seen in the case of GE capital too. In the mid 90s GE capital began by operating call centers out of India. As the operations stabilized the firm relocated more knowledge

intensive and strategic process such as data mining which are characterized by complex information flows to its captive service hub. While the decision to outsource a process may be driven by cost-related issues, the target of outsourcing could be a third party solution or a shared service center depending on a number of factors.

Captive Centers or Market Solutions?

As the tasks that migrate to a ‘service farm’ (captive or third party) become more and more information intensive, the information that is shared between the service factory and the user firm becomes increasingly strategic in nature. This has certain implications for the nature and extent of outsourcing that a firm may undertake and the governance structure of the service provider. There are some barriers to the kind of tasks that can be outsourced to the shared service hub when it is run by a third party. The risk of loss of strategic information coupled with the threat of opportunistic behavior by a third party tends to restrict ‘market solutions’ (i.e. outsourcing to a third party provider) to non-strategic operations. A two phase outsourcing model seems to be increasingly popular with large firms. A large firm first sets up a fully owned or captive service center and then transfers many of its operations to the center. Once the engagement model matures, the firm then moves some of the processes from the lower end of the knowledge continuum to a market operator even while it continues to outsource the higher end processes to the captive service hub. American Express migrated its first processes to the Indian center service center in 1995 and by 1998 the center had undertaken process improvement and re-engineering initiatives. The next year, the center began to execute high end processes. The scope of the center’s activities now include end-to-end process responsibility which includes process execution from data capture to reporting. The center is now exploring the possibility of transfer of some call center related operations to third party solution providers.

Strategic Outsourcing and Governance: Captive Centers Vs. Market Solutions

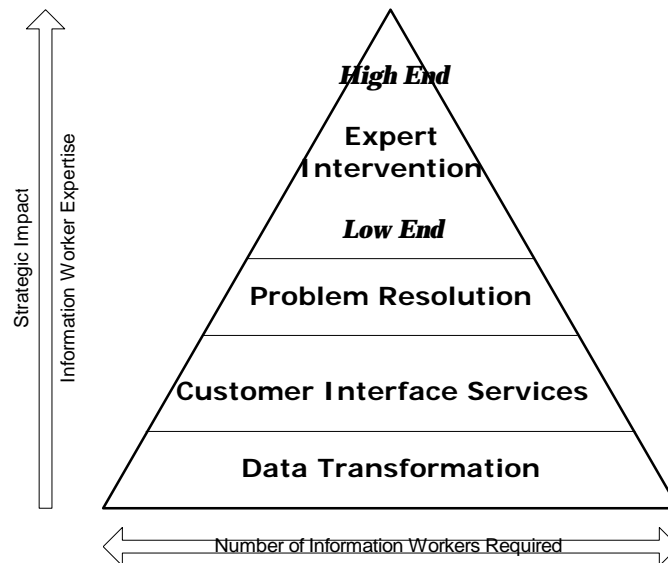
BPO Governance Parameters	Captive Service Centers	Third Party Solutions
Funding and Ownership	Usually fully owned by the outsourcing firm – occasionally a JV between a third party solution provide and the user firm with user firm enjoying the right to right to buy-back.	Usually owned by the third party solutions provider. Some relationship specific assets may be fully or partly financed by the user firm.
Strategic Impact	The processes outsourced may span the gamut from those that have largely operational and tactical impact to processes that have strategic impact.	Objective of outsourcing is to bring operational efficiencies and lower labor cost regimes. Processes rarely have strategic implications.
Governance Structure	Ranging from a hierarchy implemented through employee contracts to a quasi-hierarchy governed through a combination of employee contracts and the instrument of price.	Usually governed through the mechanism of price. The relationship may also be called the extended organizational form where the user firm monitors while the provider firm controls its employees with price as the mediating instrument that drives outcomes.

Managerial Control	Managerial control is exerted by the user company where the head of the outsourced service hub reports to the senior management of user firm.	Monitoring replaces control. SLAs are pre-specified and monitored by the provider firms. Payments to the provider firms are tied to the quality assessments made by the user firms.
Nature of Gains	Scale, Scope and Specialization. In addition there are benefits from lower labor costs. As the engagement model matures, the service hub helps reengineer information flows and improve response times.	Lower Labor costs and Economies of scale. When the task calls for expertise, there are some gains from specialization.
Migration Path of Outsourced Processes	Outsourcing usually follows the order of increasing complexity of processes. As a class of task processing becomes stable, scale is achieved through transferring the same tasks from multiple regions and business units.	Migration of processes to the third party vendor is restricted usually to a narrowly defined class of processes, such as call center work or tech support by Tele-workers.
Extent of Integration between the two Information Systems	High degree of integration between the two information systems.	Low level of integration, provider firm's access is restricted to a few context specific elements of the client's information system.

The decision to outsource or retain the process within a captive shared service center can be linked to the idea of Revenue Distance as illustrated in the following case. Processes that create some measure of switching costs for customers and, therefore, locking them in, are strategic in nature and tend to be located close to the locus of revenue capture and are usually not outsourced. Even when these processes are shipped to lower labor costs regimes, they may be sent to shared service hubs rather than to third party service providers. This is seen in the case of a leading pay TV media company in the satellite-based broadcasting market, which has shipped several customer contact processes to its call center(s) in India. [Kadab Mukesh](#), Director of Advanced Products and New Media for the company who oversaw the setting up of these centers as well as their eventual migration to their off shore call centers says "...our core strengths are in the diverse and rich menu of programs that we offer and in the transmission value that company offers to consumers. These processes are not candidates for outsourcing..." The company's call centers help it reach its customers and potential buyers with specific information about the company's products and services. These centers are no more than conduits for the information between the company and the market. The actual content of the information, the mix of customer service options to offer, the service level indicators are all strategic decisions that are made within the firm. Mukesh concurs with the idea that these processes are located at significant distance from the locus of revenue creation - "the customer service processes that we have currently outsourced are not of strategic importance in creating value to the customer or in monetizing that value. The operational risk and the parameters of operational efficiency of these processes are well understood ..." says Mukesh. A natural question that arises in this context is this: if some processes are more suitable for outsourcing than others, does it imply that these processes are characterized by the same type of knowledge work, or more generally are there certain types of knowledge work that are best outsourced?

BPO Types:

The different types of knowledge work that go into BPO can be broadly categorized thus:



- ✍ **Data Transformation:** Information workers may do straightforward data entry where data contained in a non-electronic medium (documents, audio tapes) is converted to a digitized format which can be stored in a database and manipulated via a structured query. The extent of integration required between the user firm's (client's) MIS and the providers is minimal. Often the data transformation takes place at the provider's site and is then uploaded on to the client's systems in batch processing mode.
- ✍ **Customer Interface Services:** The information worker interacts with the client's customers, and is responsible for two way information transfer. In some instances the information worker is no more than conduit for the transfer of highly structured and pre-determined information types (telemarketing) and at other times she may respond to customer initiated information requests (customer services). Information workers may also contact the client's customers to drive specific outcomes such as collecting delinquent payments from customers or initiating balance transfer transactions. Some integration between the user and provider firms' information systems is necessary. The provider firm's information workers often use the information contained in the user firm's systems to resolve customer queries and for cross selling or up-selling products and services. The provider firm's information workers then close the information loop by entering the details of the customer interaction in the user firm's databases. This is often essential for the user firm's achieving of customer centricity.
- ✍ **Problem Resolution:** The information worker would decide whether or not a course of action was in consonance with the client's policies. For instance, the information worker would decide whether a vendor's claim for a payment would be fully met or if there were one or more items that required further clarifications from the vendor

before the payment could be made. In the case of some captive service hubs, information workers would have enough information about the client's customers to resolve disputes based on broad policy guidelines. In such cases, the information worker would enjoy some degree of discretion.

- ✍ **Expert Intervention:** Information workers sometimes use a combination of knowledge, information, analytical skills and some sets of rules (supplied by the client) to drive outcomes for the client's customers. This can vary from relatively simple tasks such as providing tech support over the phone (or via e-mail) and upgrading a customer's travel status to higher class using his frequent flyer miles to management reporting and profitability analysis of financial products. This can be further divided into two broad categories based on the strategic impact of the work.
- **Low Strategic Impact:** This kind of remote information worker provides services to the client that have low strategic impact. Expert intervention requiring work such as tech-support and customer service have clearly defined objectives and have quantifiable risk dimensions. Equally important is the fact that these processes have outcomes that are easier to measure. It is possible to farm these processes out to a third party service provider or to a shared service center. Information workers tend to seek context related information to which they can be given access without requiring a high degree of integration between the user and provider firms' information systems.
 - **High Strategic Impact:** Management reporting, profit and cost center analysis, remote financial and accounting services have greater strategic impact. The nature of the work impacts directly on the firm's strategic objectives. The result of the experts' intervention may well have immediate impact on either elements of the firm's core business strategy or may result in the firm recalibrating elements of its strategy based on the outcomes of the experts' intervention. Consider for instance, a credit card company that outsources its information extraction activities - activities that involve experts looking into transaction data for patterns or for signals from the market (as manifested in the data) that offer insights into customer behavior. This may on the one hand be justified by the superior skill sets available at the provider firm and the returns to specialization that a specialist firm would enjoy. Such an outsourcing initiative has both higher benefits and risks associated with it. Processes that result in the extraction of information that leads the firm to launch new products and services and recalibrate its price points are located closer to the locus of value creation and (or) capture (at shorter revenue distances) than the typical tech-support call center processes. When the firm 'gets it right' the benefits can indeed be significant while the risks of failure can be fairly high. In the financial services industry for instance, such high strategic impact processes are usually shipped to captive service hubs rather than to third party service providers. In some cases when the cost of expertise is very high or the availability of expertise is limited, outsourcing the processes may be necessary. In such cases, the firm may opt for controlled redundancy in its migration path. The processes may be outsourced even

while the firm initially retains the ability to execute the tasks should it be necessary. As the outsourcing initiative matures and becomes more predictable with a set of metrics that help monitor performance levels, the firm will move more processes out. This is analogous to a manufacturing company carrying buffer stocks of materials that it has outsourced to a contract manufacturer to protect itself against a failed supply partnership. In the case of a knowledge intensive firm, the firm *retains the capacity to execute the processes in the short to middle run*, to protect itself against such failure. In general high strategic impact processes are migrated to captive service centers rather than outsourced to third party service providers. The desired outcomes of the outsourcing initiative such as superior service levels or fewer errors in analysis and reporting are not easy to define and therefore are usually not measurable. Expert workers tend to look at wide ranging and often context free information which may be drawn from several sources within the firm. Therefore, a high degree of integration is required between the information systems of user and provider firms.

Expert Work and Strategic Impact

BPO Parameters	Low Strategic Impact	High Strategic Impact
Measures of Efficiency and Productivity	Usually well defined and easy to measure. Metrics remain stable over time.	Difficult to define leave alone measure. Evaluation criteria and objectives of outsourcing may change frequently over time.
Risk and Return	Low risk, easy to recover from disruption in relationship. Modest gains that can be quantified.	Relatively high risk. Controlled redundancy may be necessary while outsourcing. Considerable potential for gains from outsourcing.
Level of Impact	Impacts operational details and some tactical issues.	Has strategic impact – firm’s core strategy may be influenced.
IT Integration	Information workers seek well defined context specific information. Degree of integration between the information systems of the two companies may be low.	Information workers may need wide and nearly unrestricted, context independent access to client’s information systems. High degree of integration between user and provider’s information systems required.
Managerial Control	Usually restricted to implementing shared technical standards and operating procedure. Monitoring and feedback replace control to a great extent.	Compliance on high level policy, control over outsourced process will be relinquished in stages, often slowly. Monitoring is not easy – tends to be both costly and inaccurate.
Governance Structure	Third Party Solution Providers.	Captive outsourced hubs – degree of strategic risk and need for control make third party solutions unattractive.

Remoteness Has Its Benefits

A less obvious benefit of strategic outsourcing that emerges as the relationship matures is that outsourcing to remote service centers holds a process to light thereby making the flaws in the information flows and task sequencing stand out in sharp relief. When the process is executed locally, the information workers know the local conditions and are aware of the operational context of a document (or a screen of information). Thus they can correctly understand ambiguous and incorrectly recorded elements of information in documents. Thus if a vendor's payment claim mentions a 5% "rebate" instead of a "discount", the information worker who is aware of the local customs and conventions will correctly interpret this and record it accordingly. However, when the process is outsourced to a center on other side of the globe, where information workers work without the benefit of local knowledge, these flaws will be highlighted in the information flow and will have to be resolved. Mehra says that sending processes abroad has resulted in bringing 'process discipline' to the execution of tasks at all of American Express's locations. In the outsourced environment, the development of metrics for process and the delivery of results has become critical to American Express. As the back office starts ironing out the wrinkles from the flow of information the ripples spread outward and bring discipline and rigor to front end operations. Front end operations learn to eliminate redundant tasks, processes that result in large amount of exceptions being thrown up etc. – which we term as *Idiosyncratic Information flows* – information flows that require information workers to have specialized knowledge of local conditions to process. Offshore outsourcing centers enforce process discipline that is necessary for creating unambiguous and uniformly understood sets of conventions and practices. These centers transform the output of multiple 'process artisans' into a process factory that scales for high-volume delivery easily. In order to foster operational discipline and facilitate process improvements, American Express has organized its accounting and reporting work under 'global process owners' who track the quality of processes delivered and the extent to which strategic objectives of the firm are being met in the centralized execution of these processes from an offshore center.

The Knowledge Intensive Firm: Emerging Trends

Information exchange between firms continues to become cheaper and easier. Further, technological advances - most recently manifested in the emergence of a suite of services called Web Services - are making it easier to integrate widely dispersed networks and make computers 'talk' to each other. As a result, it is becoming increasingly easier to trade some managerial control for significantly better monitoring. Firms can choose to relocate their process factories leaving a residue of critical, core processes inside the firm. Knowledge-intensive firms can place themselves at the nucleus of a cluster of process factories and orchestrate the system's functioning through a combination of control and monitoring. Rapid advances in IT and Telecommunications are driving the move towards firms that set up supply chains of knowledge where the constituent members - the providers of services and the users - resemble an *extended organization loosely connected to its federating units* where common objectives are

pursued through a combination of the price mechanism as in a market and managerial control as in an organization.

We should expect to see the outsourcing of processes that are now close to the knowledge end of the spectrum. There are already examples of firms that are moving parts of their information-intensive functions such as CRM to service centers. As these shared information hubs mature, we may see the currently 'high end' processes being executed at these hubs migrating to the market-based solution providers while process with high strategic impact currently being executed inside the firm migrate to the shared service hub. Many processes that are being executed with manual intervention today may altogether cease to exist when technologies such as voice recognition, OCR and text parsing become robust enough to be deployed commercially. While these processes will perhaps go the way of the dictation machine and accounting ledger books, other processes now considered in the middle of knowledge continuum could well take their place in the process factory. The need for human intervention in judging, analyzing and interpreting the context of an element of information is unlikely to be eliminated in the near future. We may see the knowledge worker becoming what her title suggests – somebody that works with information to create knowledge instead of transforming data into information.

Based on the recent field research conducted by the authors in the US, Singapore, UK and India.

Links:

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