BUSINESS MARKETING - TECHNOLOGY FOCUS
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Lecture 27 : E- Procurement

So, we ended the previous session at this slide.

Benefits of E-Procurement

- Benefits of e-procurement
  - Increasing the productivity of purchasing agents
  - Lowering purchase prices through product standardization and consolidation of purchases
  - Improving information flow and management

We were discussing about e-procurement which is the partner in the electronic marketplace, the constituent of B2B e-commerce. We were discussing about the benefits of e-procurement which are mainly the whole improvement in the productivity of the purchase process of the purchasing agents, lowering of the purchase prices because of product standardization and consolidation of purchases.

This consolidation of purchases that is facilitated by e-commerce is something that we will discuss in a little bit more detail a little later and obviously this whole e-method improves the information flow and management in the procurement process and possibility of buying from non-contract vendors that means non-standard vendors due to some emergency situation which often introduces technical problems.

Benefits of E-Procurement (cont.)

- Minimizing the purchases made from noncontract vendors. Improving the payment process
- Establishing efficient, collaborative supplier relations
- Ensuring delivery on time, every time
- Reducing the skill requirements and training needs of purchasing agents
- Reducing the number of suppliers
- Streamlining the purchasing process, making it simple and fast

So, on one hand we try to respond to an emergency situation but a non-standard supply may create technical problem. All that is eliminated in the e-procurement process or at least minimized to a large extent in the e-procurement process because it establishes efficient collaborative supplier relation which ensures delivery on time every time. Also, because of the high degree of automation, these processes are very useful for helping out new purchase agents.
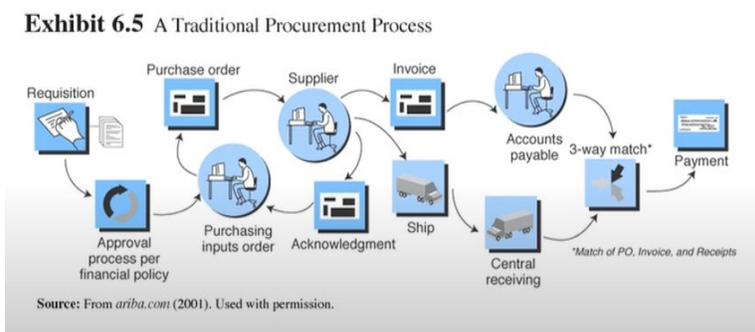
So, both on the sell side as well as on the buy side, the technology becomes an enabler for the human beings and it enhances their capability and supplements their lack of experience. Also, because of various pre-qualification method and standardization of vendors, it helps us in reducing the number of suppliers to the most plausible or most eligible ones and thus the whole purchase process gets simplified, becomes faster and gets streamlined. It actually reduces a key element in the ordering cycle, which is the cost of ordering. That gets reduced, improves sourcing. It integrates the procurement process with tight budgetary control in a much more efficient and effective manner.

Benefits of E-Procurement (cont.)

- Reducing the administrative processing cost per order
- Improved sourcing
- Integrating the procurement process with budgetary control in an efficient and effective way
- Minimizing human errors in the buying or shipping process
- Monitoring and regulating buying behavior

It helps to eliminate human errors. So, the whole supply chain, this buying selling process improves significantly through this process.

One-from-Many: Buy-Side Marketplaces and E-Procurement (cont.)

Exhibit 6.5 A Traditional Procurement Process

Requisition — Purchase order — Supplier — Invoice — Accounts payable 3-way match* — Payment

Approval process per financial policy — Purchasing inputs order — Acknowledgment — Ship — Central receiving

*Match of PO, Invoice, and Receipts

Source: From *ariba.com* (2001). Used with permission.

So, this diagram again taken from Vitale, his book shows you the entire improvement that happens in the procurement process.

One-from-Many: Buy-Side Marketplaces and E-Procurement (cont.)

Exhibit 6.6 The E-Procurement Process: A Buyer's View
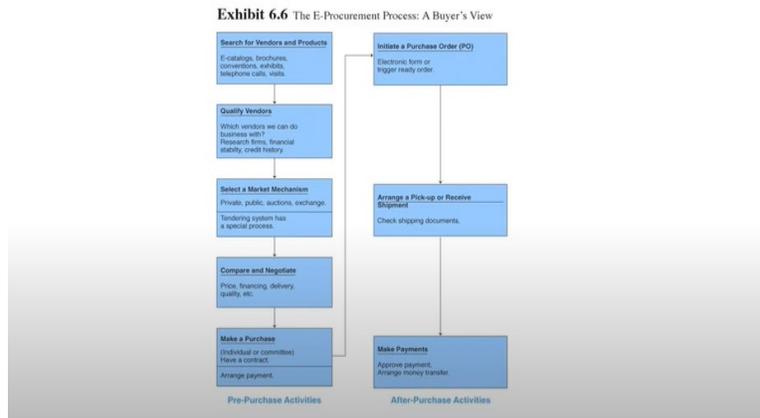
Look at this traditional procurement process where acquisition is raised and then approval is given to that requisition, then it goes to the purchase agent, purchase order is issued to the supplier.

In fact, we are to simplify this diagram, we have even eliminated the whole process of inviting offers and evaluation and all that. We are looking here as a standard item where acquisition comes and the purchase agent places an order on any of the enlisted vendors, any of the rate contract vendors. So, you have the purchase order placed on the supplier, the supplier affects the shipment, raises the invoice, it becomes the accounts payable. When the shipment is received at the central receiving, then the matching takes place and the payment is initiated.

This is the multi-stage, multi-step traditional procurement process. And look at this diagram which shows how that whole process gets automated. So, the searching of vendors and products is automated through the electronic method. Pre-qualification of vendors happens through also to a large extent through the electronic process with some human intervention. It actually then establishes the market mechanism.

The comparison of offers as well as negotiation, automated negotiation happens, purchase is initiated, purchase order is issued and the entire delivery system takes place. Once the matching of the delivery with the central receiving is signaled, the payment is

initiated. You can see the number of steps are reduced. Almost entirely free of human intervention, the whole process is automated, error free, efficient and to a large extent effective and it is open to monitoring at any stage and if necessary any corrective action if it is needed can be easily initiated.

Implementing E-Procurement

- Implementing e-procurement—major e-procurement implementation issues
  - Fitting e-procurement into the company EC strategy
  - Reviewing and changing the procurement process itself
  - Providing interfaces between

    e-procurement with integrated enterprisewide information systems such as ERP or supply chain management (SCM)

For making the e-procurement an effective system within the B2B e-commerce system, it must be part of the overall strategy.

So, it must be fitted within the e-commerce strategy of the organization.

Implementing E-Procurement (cont.)

- Coordinating the buyer's information system with that of the sellers; sellers have many potential buyers
- Consolidating the number of regular suppliers to a minimum and assuring integration with their information systems, and if possible with their business processes

Let us now, we have more or less discussed all these efficiency and effectiveness improvement points and you can look at these slides in a little bit more detail at your time and they are easily understood these additional points that are made in some of these slides.

Buy-Side E-Marketplaces: Reverse Auctions

- One of the major methods of e-procurement is through reverse auctions (*tendering* or *bidding model*)

  request for quote (RFQ): The "invitation" to participate in a tendering (bidding) system

- The reverse auction method is the most common model for large MRO purchases as it provides considerable savings

I will now move to this whole reverse auction process enhanced by the electronic method. So, the e-marketplace for reverse auction. One of the major methods of e-procurement is through reverse auction which is the traditional tendering and bidding model that we already know.

So, requests for quotes are issued through the system to enlisted vendors. The invitation to participate in a tendering bidding system goes to them. The reverse auction method is very widely now almost universally used for all kinds of large MRO purchases. MRO as you remember again, maintenance and repair and operational spares and standard item procurement and that whole process is now entirely dependent on electronic reverse auction.

Reverse Auctions (cont.)

- Conducting reverse auctions
  - Thousands of companies use the reverse auction model
  - They may be administered from a company's Web site or from an intermediary's site
  - The bidding process may last a day or more
  - Bidders may bid only once, but bidders can usually view the lowest bid and rebid several times

Thousands of companies use the reverse auction model today. They may be administered as we discussed earlier from the company's own website or from an intermediary site. The bidding process will usually last only a day or more and bidders may bid only once. But as the bid prices, if the system you so want, the bidders can actually re-bid several times looking at the prices that are coming up. So, that way, this kind of re-bid facility if provided, this is of course only feasible for standard items.

For customized items, this process cannot be followed because that may lead to complications. But for customized items like stationary products, like printer supplies, like various kinds of standard parts and all these cases, this rebid facility can create very competitive purchase for the buyer.

Reverse Auctions
A Pioneer: General Electric's TPN

- Procurement revolution at GE—Trading Process Network (TPN) Post
  - With this online system, the sourcing department received the requisitions electronically from its internal customers and sent off a bid package to suppliers around the world via the Internet
  - The system automatically pulled the correct drawings and attached them to the electronic requisition forms

A trading process network or the TPN created by General Electric at one time was a revolutionary system. Today many companies use this kind of system in many different ways.

It is a large reverse auction system. In this online system, the sourcing department, they receive the requisition electronically from internal customers. So, from the maintenance department, from the offices, from the desk of people, the sourcing department will be receiving large number of these electronic requisitions. So, there is no, you know, human transmission waiting for the attention of the purchase executive. All that is now eliminated and it automatically, the bit package gets sent out to suppliers around the world if necessary, if applicable via the internet.

Reverse Auctions
## A Pioneer: General Electric's TPN (cont.)
– Benefits of TPN

- labor involved in the procurement process declined by 30%
- cut by 50% staff involved in the procurement process and redeployed those workers into other jobs
- reduced the number of days to complete a contract by half
- invoices were automatically reconciled with purchase orders
- procurement departments around the world were able to share information about their best suppliers

Nationally, it will definitely go to all the enlisted and approved vendors. The system automatically pulls the correct drawings and attaches them to the electronic requisition form that goes out to the approved vendors. So, it was studied in the General Electric TPN system that the labor involved in the procurement process declined by almost 30%. It cut 50% of the staff involved in the procurement process and redeployed these workers to other jobs. The time cycle became almost half.

Invoices were automatically reconciled with purchase orders and procurement departments around the world were able to share the information about their best suppliers.

Reverse Auction: The Process

Exhibit 6.8 The Reverse Auction Process
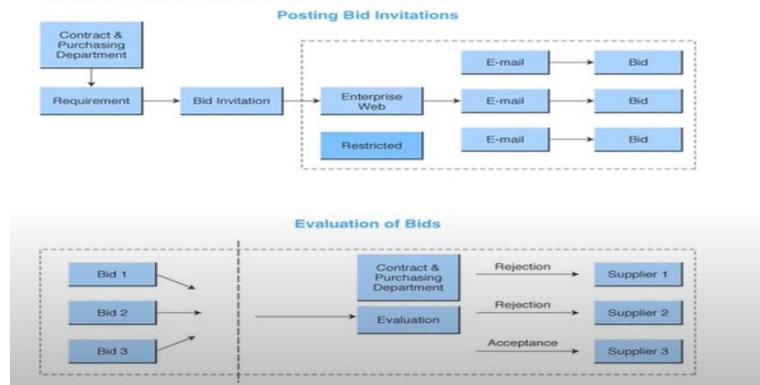
So, lot of advantages were obtained by this general electric electronic automated process of buying and as a result of marketing by their vendors and this reverse auction process is the kind of thing that gets implemented when you adopt this kind of automated system so as you see here on this diagram again taken from Vitale. Contract and purchasing department, they send out the requirement in the form of bid invitation to intended approved suppliers. It can happen through the enterprise web, it can happen through the worldwide web.

The requests for offer, the bid invitations can go out via email, or other forms of electronic communication that have now come up. It can happen through direct data interchange in many cases. Then the bids come in. These bids are then evaluated to a large extent through an automated system.

But of course, it can be supervised by human beings. And as you can see here at the end, two offers are rejected and one offer is accepted and the order goes to that particular supplier. And the marketing process for the suppliers now will be changing to providing right kind of information, updating all their catalogs, providing the all necessary technical inputs so that when the evaluation takes place, they have put their best foot forward. This is actually a very efficient system and it is now working in many many organizations, thousands of organizations, tens of thousands of organizations around the world.

Reverse Auctions
A Pioneer: General Electric's TPN (cont.)

– GXS Express Marketplaces is an expanded system that makes it a public posting place for other buyers
- Suppliers gain instant access to global buyers
- Dramatically improve the productivity of their bidding and sales activities
- Increased sales volume
- Expanded market reach and ability to find new buyers
- Lower administration costs
- Shorter requisition cycle time
- Improved sales staff productivity
- Streamlined bidding process

Like this General Electric TPN system which was a pioneer, it showed that the suppliers gain instant access to global buyers through this kind of method.

It dramatically improved the productivity of their bidding and sales activities. So, the whole marketing process gets shortened, updated, time sensitive and efficient. Therefore, sales volume increases and therefore, more attractive prices can be offered because the cost of sale or cost of marketing is getting significantly reduced through this kind of processes. The lower administration cost, the shorter requisition cycle time, the improved sales staff productivity, the streamlined bidding process, all that allows the marketer to become more competitive.

Other E-Procurement Methods

- *Internal marketplace:* The aggregated catalogs of all approved suppliers combined into a single *internal* electronic catalog

So, this is a bidirectional improved method. Now, derivatives from this method will be for some organizations, for a very large organization like Tata Steel, Tata Chemicals or Hindalco or many such organizations or Maruti. Particularly the large automobile manufacturers, they profusely use this kind of system which is called the internal marketplace where the aggregated catalogs of all approved suppliers for standard items are combined and presented to the individual departments within the organization as a single large multi-section electronic catalog.

Internal Marketplace (cont.)

- Benefits of internal marketplaces
  - corporate buyers quickly find what they want, check availability and delivery times, and complete an electronic requisition form
  - reduce number of regular suppliers
  - easy financial controls

That can be referred to by the requisition person and this benefit of the electronic marketplace is that corporate buyers now can quickly find what they want, check the availability and delivery time and they can complete an electronic requisition form. It reduces one key condition for this system to operate efficiently is that the number of suppliers should be carefully vetted should be carefully qualified. So, only qualified approved vendors participate in this electronic automated process and this also improves the whole financial control process.

Internal Marketplace: Desktop Purchasing

- *Desktop purchasing:* Direct purchasing from internal marketplaces without the approval of supervisors and without intervention of a procurement department
- *Desktop purchasing systems:* Software that automates and supports purchasing operations for nonpurchasing professionals and casual end users

So, this is often called the desktop purchasing. The desktop purchasing is a direct purchasing from in the internal marketplace and because these are already pre-approved prices and delivery and other terms. So, therefore, no multi-stage approvals are necessary and up to a certain value it can become an automated process. So, the individual indentors can be empowered in this process. So, desk type purchasing systems are basically a hardware software implementation that automates and supports the purchasing operation for non-purchasing professionals and end users.

Other E-Procurement Methods (cont.)

Exhibit 6.9 Desktop Purchasing: Key Functionality and Connectivity
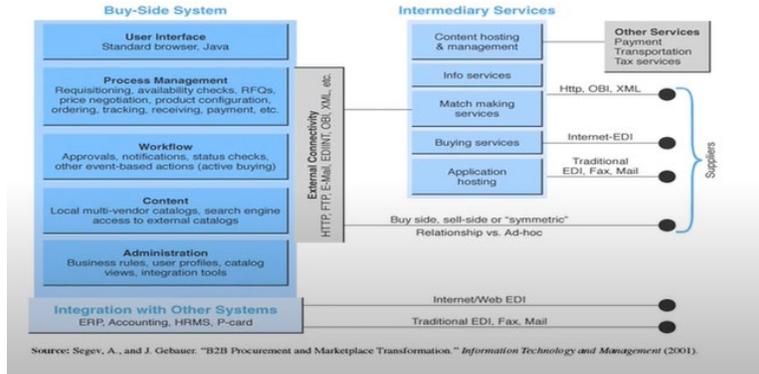
So, this is kind of the electronic presentation of the configuration. So, you have on the left hand side the buy side systems where the user interface is provided through appropriate hardware and software, and it is supported by the appropriate workflow and content management and administration, and it interfaces with the intermediary services and connects to the suppliers. So, from the left-hand side, we have the buy-side system, and on the right-side, we have the sell-side or the market system.

Other E-Procurement Methods (cont.)

- Industrial malls
  - Distributors that aggregate products from hundreds or thousands of suppliers in one place
    - *Horizontal*—carrying MRO (nonproduction) materials for use in a variety of industries
    - *Vertical*—carrying products used by one industry but at various segments of the supply chain

This approach can actually also lead us to another format, another marketplace which sometimes is called the industrial mall.

The industrial malls are distributors that aggregate their products from hundreds of thousands of suppliers in one place. So, you have just like in real world, you have distributors who aggregate the components and parts from many many suppliers. So, they become kind of a wholesaler from individual suppliers that whole thing can be now transferred to the electronic platform. So, you can have horizontal industrial mall which are basically electronic systems that carry MRO that is non-production parts and materials for use in various kinds of industries.

So, it is a really a mall equivalent where any purchaser can get any kind of standard stationary or other parts by accessing the electronic system or it can be a vertical mall, where it carries products used by one particular industry, but at various segments of the supply chain.

Other E-Procurement Methods (cont.)

- E-auctions
    - sellers are increasingly motivated to sell surpluses and even regular products via auctions
    - e-auctions provide an opportunity to buyers to find inexpensive or unique items fairly quickly

So, for a very large organization like Rourkela Steel Plant, this kind of system can become an useful system. I will now go towards the end of my session, and I will introduce you to some of the variants of this reverse auction, etc., that we were discussing. These e-auctions are becoming increasingly popular.

Here sellers are increasingly motivated to sell their surpluses and even regular products via auctions. So, initially metaljunction.com started I think as an activity of Tata Steel but now metal junction actually provides a platform to many other metal producers and

scraps and various kinds of excess materials are sold through auctions through this kind of websites. So e-auctions, they provide an opportunity to buyers to find inexpensive or unique items fairly quickly. So, metal junction has therefore become or that kind of sites have become very popular with both buyers and sellers.

Other E-Procurement Methods (cont.)

- *Group purchasing:* The aggregation of orders from several buyers into volume purchases so that better prices can be negotiated

Group purchasing is something that I discussed a little while back where number of companies aggregate their orders together to create a volume purchase so that the best price can be negotiated.
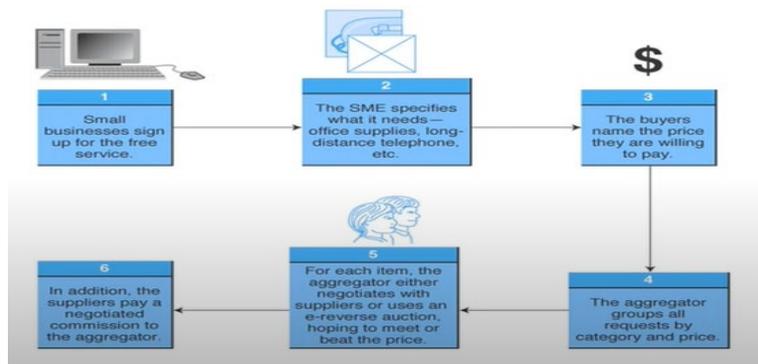
Other E-Procurement Methods (cont.)

- Internal aggregation—companywide orders are aggregated using the Web and replenished automatically
- External aggregation—provide SMEs with better prices, selection, and services by aggregating demand online and then either negotiating with suppliers or conducting reverse auctions

And it can be an internal aggregation where company-wide orders are aggregated using the web and replenished or it can be external aggregation.

This is more interesting where SMEs can provide their prices, selection and services by aggregating demand online and then either negotiating with suppliers or conducting reverse auctions.

So, this is, all these are now becoming quite popular and regularly used. So this is a graphical representation of the group purchasing process. So, you have on the block, the first block is small business.

They sign up for the free service. The SME specifies what it needs. It could be office supplies, some standard electronic equipment, office equipment. Then the buyers, they name the price, the reserve price kind of what they are willing to pay. The aggregator then groups all of these requests by category and by price.

For each item, then the aggregator either negotiates with the suppliers or they use an e-reverse auction to get to the best price and delivery terms and homing on to the target supplier and then they try to beat the reserve price that is provided and in addition the suppliers actually pay negotiated commission to the aggregator. So, this is actually a win-win situation for the whole chain of players and it can actually bring efficiency and cost

reduction by automating the process which can then be shared that whole cost saving can be shared by all the players in the chain.

Other E-Procurement Methods (cont.)

- Purchasing direct goods
  E-purchasing direct goods allows buyers to:
  - get them faster
  - reduce the unit cost
  - reduce inventories
  - avoid shortages of materials
  - expedite their own production processes

This is again something that is today If not particularly in countries where marketers collaborate as well as buyers collaborate more easily like in European countries these methods are very widely used.

So, e-purchasing direct goods allows buyers to get them faster, reduce the unit cost. I mean we are again and again saying the same thing.

Other E-Procurement Methods (cont.)

- Electronic bartering
  Bartering exchange: An intermediary that links parties in a barter; a company submits its surplus to the exchange and receives points of credit, which can be used to buy the items that the company needs from other exchange participants

So, please go through these slides and understand the nuances. Lastly, I would like to mention that even electronic bartering which is an intermediary that links parties in a barter. So, a company submits its surplus to the exchange and receives points of credit which can be used by them to buy other items the company then needs from the exchange participants.

Infrastructure for B2B

- Major infrastructures needed for B2B marketplaces
  - Telecommunications networks and protocols
  - Server(s) for hosting the databases and the applications
  - Software for various activities for executing the sell-side activities, buy-side activities, PRM, and building a storefront
  - Security for hardware and software

This is also an interesting form of B2B e-commerce that has become popular in some countries. So, major infrastructure that are needed are usual hardware and software and telecom networks.

Other E-Procurement Methods (cont.)

- *Electronic data interchange (EDI):* The electronic transfer of specially formatted standard business documents, such as bills, orders, and confirmations sent between business partners

Earlier some of the purpose built networks were used like the EDI.

Other E-Procurement Methods (cont.)

- *Value-added networks (VANs):* Private, third-party managed networks that add communications services and security to existing common carriers; used to implement traditional EDI systems

But now actually everything is based on the internet with some many kinds of secure applications.

Other E-Procurement Methods (cont.)

Web-based EDI Services

- *Internet-based (Web) EDI:* EDI that runs on the Internet and is widely accessible to most companies, including SMEs

So, the EDIs have now given way to more open system based but secure systems.

Managerial Issues

1. Can we justify the cost of B2B applications?
2. Which vendor(s) should we select?
3. Which B2B model(s) should we use?
4. Should we restructure our procurement system?

So, I will end my presentation with this slide in front of you that what do you think are today the justifications for B2B e-commerce applications, how the vendor selection process can be automated and which B2B model will be useful in your organization and how you can restructure the procurement system in your organization.

Managerial Issues (cont.)

5. What restructuring will be required for the shift to e-procurement?
6. What integration would be useful?
7. What are the ethical issues in B2B?
8. Will there be *massive* disintermediation?

Okay, so that kind of brings us to the concluding session of B2B e-commerce.

Summary

1. The B2B field: EC activities between businesses
2. The major B2B models: sell-side; buy-side; trade exchanges; collaborative commerce
3. The characteristics of sell-side marketplaces: online direct sale by one seller to many buyers

The summary is in front of you. E-commerce activities happen between businesses in the B2B field.

The major B2B models are sell side, buy side, exchange, trading exchanges and collaborative commerce and characteristics of sell-side marketplace, online direct sale by one seller to many buyers. Sell-side intermediaries provide value-added services to manufacturers and business customers. And the characteristics of the buy side marketplace are the e-procurement that expedite purchasing, save on item and administrative cost and gain better control over the purchasing process. So now we have more or less completed the core parts of our course.

We will now get to those sections where we will look at how to measure our marketing processes, what kind of metrics we can use to control our marketing processes and related topics. Thank you.