ICICI Bank SME KNOWLEDGE Series

Creating Value for SME's

Concepts & Strategies in Indian context

Section – VIII
Role of Technology: Production, Distribution & Support

Executive Summary

- **Technology is utilised by the SMEs in the following:**
  - Basic Operational Infrastructure
  - Product Technology
  - Process Technology
  - Skill and Knowledge base
  - Systems & Practices
  - Information Support
- **Logistics & OptimisationTechnology search & transfer are important issues**
- **Financing for technology upgradation is a big challenge**
- **Technology for Production, Distribution and Support is vital**
- **Integrity, Reliability & Security are the key to success**
- **Supply Chain Management (SCM) is the single largest contributor to bring radical improvements**

Authors

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Role of Technology: Production, Distribution & Support

Ms. Dolly Bhasin, SPH Consultants

The rapid changes in technology in the current era are responsible for creating multi-prong variations in the market place in respect of competitive advantages demands, ruling prices etc. These drastic alterations are due to the technology variations found in different products. Technology therefore plays a very vital role in deciding the sustainability of the business operations of an enterprise and leveraging it in the market place for competition.

Therefore, coping with technology is a major challenge for small enterprises. Technology is utilized by the SMEs in the following:

- Basic Operational Infrastructure
- Product Technology
- Process Technology
- Skill and Knowledge base
- Systems & Practices
- Information Support
- Logistics & Optimization

Why Technology Support is required for SMEs?

Small enterprises are regarded for their labour intensity and the capability to work with local resources. In the past, this has often led to less emphasis on technology. Run of the mill coupled with functional packaging and inadequate finishing have at times led to small sector products being labeled as being of poor or substandard quality. This has a cascading impact on competitiveness. In the Indian context, a desire to cut initial costs led to hand-me-down machines being purchased. As small enterprises realise the need to link up with large ones, they are having a relook at technology options, which would improve productivity, effectiveness and competitiveness.

What Technology Support is required for SMEs?

While sourcing technology, small businesses need to concentrate on the following essential issues: -

a. Information about technology
b. Actual procurement of technology
c. Finance for technology upgradation

a. Information about Technology

- For small units, information about technology options is often through word of mouth or from a visit to an advanced unit.
- Few have access to technical literature, professional journals or information about new product launches.
- In India, much of this is changing. With the advent of Internet, new vistas are opening up through electronic journals; catalogue downloads and advanced search facilities.

The Technology Bureau for Small Enterprises (TBSE)
Promoted with the assistance of the UN offers access to databases and information on technology available at www.techsmall.com

NSIC's Techshowindia
NSIC has taken up an initiative to enhance technology options for SSIs.

Cluster Development
Technology intervention in clusters offers nearby units and opportunity for a look and feel of advanced technology.

Trade Fair Participation
Entrepreneurs are also assisted to participate in overseas trade fairs to update them with the latest worldwide.

SIDO Technical Institutes
Organize Trainings, CAD/CAM seminars and Workshops to develop skilled manpower to assist the task of technology absorption.

- Tool Rooms
- Testing Centres
- Production-cum-Process Centres

Technology Information Sites
Many technology information sites have been put up to offer technology-related information to SMEs. Some of them are:

- APCTT Site (http://www.apctt.org/)
- JETRO Site (http://www.jetro.go.jp/ttppe/)
- CEDOK Site (http://www.kar.nic.in/cedok/)
- A detailed list Technology Transfer sites is compiled at SIDO Online (http://www.smallindustryindia.com/publications/traderep/tecsite.htm)

b. Actual Procurement of Technology

Even with information, barriers to import of technology, technology transfer issues, vendor capability, after sales support, import procedures impede procurement. In India, the Asia Pacific Center for Transfer of Technology promotes match making between buyer and seller and facilitates procurement through escort services. Encouragement to import of capital goods has also helped matters.

Technology Resource Centres
For the benefit of SMEs seeking to know about the latest technologies available all over the world, 21 SISIs have been converted into Technology Resource Centres (TRCs).

Technology Upgradation

Excellent technical support to SMEs is available through NSIC & SIDBI

- NSIC-Technical Service Centres, Extension Centres and Sub Centres
- NSIC Technology Transfer Centres
- NSIC Technology Financing Schemes
- NSIC Software Technology Parks
- SIDBI's Technology Development and Modernisation Fund (TDMF) Scheme
- Technology Bureau for Small Enterprise formed by SIDBI to oversee Technology Transfer, Match making Services, Finance Syndication and facilitating Joint Ventures

c. Finance for Technology Upgradation

Small enterprises look to external sources of funding for upgrading technology as withdrawing money from business entails its own costs. In India, a Technology Upgradation and Modernisation Fund and a Hire Purchase Scheme attempt to meet this requirement. These are however, funds at normal lending costs. Upgradation in small industries has been put into place to reduce the cost of funds.

Major Technology Promotion Schemes

- Small Industry Cluster Development Program
- SIDBI's Scheme for Technology Modernisation
- Quality Certification Schemes
- Schemes for Alternative Energy Use
- Credit linked capital subsidy scheme for technology upgradation

Technology that need priority attention for SMEs

Technology to support Production – Enterprise Resource Planning (ERP)

- Use of ERP software
- CAD/CAM applications for design automation
- Industrial automation using real time production control systems

Technology to support Supply Chain Management (SCM)

- Use of Bar coding
- Use of RFID
- GPRS based tracking and tracing
- Internet based SCM

Technology to support Customer Relationship Management (CRM)

- Integrated telephony and communication systems
- Centralized database
- Internet based contact centres

References

1. SIDO Online at www.smallindustryindia.com

2. Know SSI CDROM, Release *3.0*

Role of Technology in Supply Chain Management

Mr. Praveen Ahluwalia, ASHPRA Enterprises Private Limited

Supply Chain Management (SCM) comprises of Process of Planning, Implementation & controlling the operations of the Supply Chain.

With the focus on Customer Satisfaction, it covers movement & storage of material; work in process, inventory & finished goods from origin to consumption, activities involved in Sourcing, Procurement, Conversion & Logistics management. A term of Supply Chain Event Management (SCEM) is a consideration of all-possible occurring events & factors that can cause disruption in supply chain.

Supply Chain Management involves addressing problems on distribution network configuration, number of locations of suppliers, production facilities, distribution centres warehouses, distribution strategies, information to integrate systems & process and also Inventor management with respect to quantity, location of raw material, work in process & Finished goods.

A Supply Chain Management activity can be classified into STRATEGIC, TACTICAL & OPERATIONAL.

Supply Chain Business Process Integration involves collaborative work between, buyers & suppliers.

The Key Supply chain processes are: -

- Customer Relationship
- Customer Service
- Demand
- Order Fulfillment
- Manufacturing Flow
- Supplier Relationship
- Product Development and Commercialization
- Return Management.

To manage the above effectively there is major role of Technology, specially the Information & Communication Technology (ICT) in the form of E-COMMERCE & E-BUSINESS in creating value for SMEs in the Indian context. We try to examine the same through:

a. **E-COMMERCE CONCEPTS & DEFINITIONS**
b. **E-COMMERCE APPLICATIONS**
c. **E-COMMERCE IN DEVELOPING COUNTRIES**

a. E-COMMERCE CONCEPTS & DEFINITIONS

Electronic Commerce is a wide range of online business activities for products & services. In this parties interact electronically rather than by direct physical contact. This involves buying & selling over the Internet or conducting of transaction involving transfer of ownership or rights of use of goods or services. It is use of electronic communication & digital information processing technology in business transactions. The International Data Corporation (IDC) estimates very high growth in next decade.
The primal processes in E-business covers:

- **Production** process, which includes procurement, ordering, payments, links with suppliers.
- **Customer focus** processes covering promotional & marketing efforts processing of purchase orders & Payments.
- **Internal Management** processes including employee service & training internal information, video conferencing & recruiting.

b. E-COMMERCE APPLICATIONS

The different **E-commerce** options are **B2B, B2C, B2G, C2C, & Mobile Commerce (m-Com)**. These are business transactions between Businesses, Consumer & Government in different forms. It involves:

- **Logistics-**Transportation, warehousing & distribution
- **Application Service providers -** hosting & management of packaged software;
- **Deployment -** Outsourcing of functions, auction solutions software, content management software & Web based Commerce Developers.

Thus ICT Technology, through E commerce can save time, cost with very wide options of business transactions based on high credibility, plays a very vital role on supply chain management.

c. E-COMMERCE IN DEVELOPING COUNTRIES

Now as far as SMEs are concerned they may be discriminated as the information on pricing etc., may be proprietary. This could well be taken care off through Shared Digital Business Infrastructure.

In the Developing Countries there are traditional Payment & Banking methods, which are now being changed to Electronic Payment Systems & Electronic Banking systems.

How SMEs in Developing Countries could benefit with E-Commerce?

The Importance of e-commerce to SMEs in Developing Countries is immense as Information on following is most valuable to SMEs, customers and markets-Product design, Process technology, financing source & terms. The Internet & other ICT's facilitate access to this information.

In addition for SMEs in developing Countries, the Internet is a quick easy, reliable & inexpensive means of acquiring online technical support and software tools & applications, lodging technical enquiries, requesting repairs and order replacement parts or new tooling.

The Internet is also instrumental in enabling SMEs in developing countries to join discussion groups with their peers across the Globe who are engaged in the same business & thereby share information, experience & even solutions to technical problems.

Internet is used for E-Commerce for email, Communication & Research. Some SMEs use it to communicate with suppliers & customers only for as a channel for maintaining business relationship.

Issues & Concerns on use of E-Commerce

The main issues of concern those barriers uses of E-commerce or Technology by SMEs in Supply chain Management are: -

- Lack of awareness & understanding of Value of E-commerce.
- Lack of ICT knowledge & Skills & Availability of Manpower.
- Financial implications, infrastructure & above all Security of Transactions, Piracy & Security related issues.

The Role of Govt in developing E commerce is important.

- Create favorable Policy Environment & become leading edge user of E-commerce Bridge the Digital divide
- Legal recognition of E commerce, Consumer protection from fraud, Right to Privacy, etc.
- Protection of Intellectual Property & Legal Protection against Copying/Hacking.
- Govt should use E Commerce For E-Procurement, Custom Clearance & Tax Administration E-SME Development.
- The market would drive E commerce development & Pvt sector fuels it, Govt to provide incentives.

Large Business Houses & Govt should encourage to Transfer Technology to SMEs by offering free training in ICT & E-COMMERCE. They should organize Awareness Campaigns, eGovernment initiatives & provision of shared Infrastructure Network, Localization of Content, and Strengthening Consumer Protection & Human Resource Development.