7.1 Language Technologies Market Survey Report

The Local Language Applications Market, currently estimated at about $11 million, is likely to grow at a CAGR of over 79 percent over the next three years i.e. 2002-2005, and is expected to cross $64 million by 2005.

The study on Local Language IT Market in India, conducted for MAIT, the Apex body representing hardware, training, R&D and associated services sectors of the Indian IT Industry by the leading international growth consulting and training company Frost & Sullivan (F&S) provides a complete assessment and analysis of the local language application market in India. It is aimed to gauge the size of the Local Language IT applications market, its future potential and the strategy that needs to be adopted by the combine of the Government, Industry and academia to fully harness its potential. The Study also examines the different end-user segments including the Central Government, different State Governments and Public Sector Undertakings. Competitive landscape of the Indian market for local language applications is also analyzed in detail and revenue forecasts are provided. In addition, drivers and restraints, market and technology trends, pricing issues, demand analysis and market share trends provide a comprehensive view of the entire market.

The study reveals that current market size of the local language applications has remained limited due to lack of universal standards for scripts and fonts, for input devices and transliteration tools; limited availability of vernacular software and fonts and low availability of local language content on the internet. Further, the Language technology industry is very nascent and highly fragmented. The market is currently driven by off-the-shelf applications for end users such as the publishing industry and Government sectors. However, in the next two to three years the e-governance initiatives being undertaken by various Government bodies are expected to spur the growth in the local language computing market in India.

The Key drivers (Fig.1) of the local language application market in the near future will be:

- Introduction and promotion of new technology solutions and applications by the industry to cater to the growing needs of citizens, business and the government sector;
- Increasing content creation, in local context, in Indian languages for the web;
- Initiatives revolving around the commercialization of products and applications being developed in the numerous research labs in India; and
- Local language project initiatives being undertaken by vendors, central and state Governments.

The challenges (Fig.2) that need to be tackled for improving computing in vernacular include:

- Lack of formal IT-based language training amongst the users;

Local Language Software Market: Market Restraints Ranked in Order of Impact (India), 2003-2009

Rank	Driver	1-2 Years	3-4 Years	5-7 Years
1	Newer areas of applications for Local Language IT	High	High	Medium
2	Government initiatives	High	High	Medium
3	Bundling of multi-lingual software	High	Medium	Low
4	Advanced research	High	Medium	Medium

Fig.1 Source: Frost & Sullivan

Local Language Software Market: Market Drivers Ranked in Order of Impact (India), 2003-2009

Rank	Restraint	1-2 Years	3-4 Years	5-7 Years
1	Lack of formal language-based IT training	High	High	Medium
2	Limited usage of available local language applications	High	Medium	Medium
3	Lack of spending	High	High	Medium
4	Low connectivity	High	High	High

Fig.2 Source: Frost & Sullivan

- Lack of awareness regarding e-governance computing applications at the grassroots level and low PC penetration across the country; and
- Insufficient or delayed implementation of the initiatives taken by different government bodies

A) The Local Language IT Market:

The Local Language IT market constitutes predomi-

Local Language Software Market: Market Engineering Measurements (India), 2002

Measurement Name	Measurement	Trend
Market age	Development stage	
Revenues	$11.0 million	Increasing
Potential revenues (maximum future market size)	$64.0 million	Increasing
Base year market growth rate	83.0%	Increasing
Forecast period market growth rate	79.90%	Decreasing
Saturation (current/potential users)	17.18 %	-
Replacement rate (average period of unit replacement)	4 years	Steady
Average price	$200	Decreasing
Price range	$100-1,000	Steady
Price sensitivity	High	Increasing
Total potential customers	More than 3 million	Increasing
Number of products	20	Increasing
Average product development time	More than 4 years	Steady
Product launches (number of new products introduced into market)	3	Increasing
Competitors (active market competitors in base year)	12	Increasing
Degree of competition	4	Increasing
Degree of technical change	High	Increasing

Fig. 3 Source: Frost & Sullivan

nantly of word processing. Word Processing applications revenues in 2002 constituted 48 percent of the total market, with Packages and DTP constituting 20 percent and 18 percent respectively. While word processing software will continue to occupy a lion's share of the total revenues by 2005, package applications and local language multimedia and video applications are likely to grow at a significant pace.

Reflecting the diverse application areas that local language IT will be used across in the future, consulting services revenues are expected to see a big jump. Consulting services revenues were 47 percent in 2002; by 2005 the consulting services revenues are expected to grow to 67 percent of the total market.

Investments by Governments on e-Governance will find a way to the Local Language IT market. The share of e-Governance will increase from 38 percent in 2002 to 58 percent in 2005.

The Local Language IT market constitutes of about 12 to 14 vendors. Most of the domestic players are regional and have limited access to the market. They offer both off-the-shelf products and custom made

Local Language Software Market: Competitive Structure (India), 2002

Number of Companies in the Market	12-14 active players in the local language software market
Types of Competitors	Local language software vendors System integrators Consultants
Distribution Structure	Local language software is distributed directly and indirectly. Direct distribution and implementation is through Language software vendor Consultant and language software vendor Indirectly local language software is distributed through the following distribution channels: Value added Resellers Hardware /PC sellers Systems Integrators Consultants
Tiers of Competition	Three tiers of competition exist Indian private software vendors Indian government owned software vendors Multinational software vendors
Key End-User Groups	Government offices E-governance projects Banking and insurance Publishing sector Multimedia and entertainment sector Individuals Small and medium enterprises Factories
Competitive Factors	Managing complex products or long lead time for sale Strong distribution network for reaching mass market for off-the-shelf products Adoption of standards such as ISCII and Unicode Application characteristics in terms of feature-functionality, scalability, ease of customization, and background of the vendor

Fig. 4 Source: Frost & Sullivan

applications in all the major Indian languages. The other set of key player in the Local Language IT market are international players. International vendors are yet to take off in a big way in terms of the application offering across different languages. IBM offers a Hindi version of Lotus Notes in India. However, the participation of international vendors is expected to increase in the next three years.

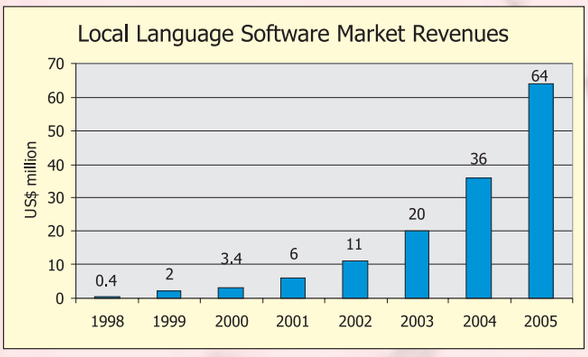
Note:

1. Saturation: Frost & Sullivan defines Saturation as the ratio of current to potential sales at the terminal year of the revenue forecast
2. Degree of competition scale indicates the extent to which the market is competitive and is calculated on a 10 point scale. A rating of 10 indicates the market's are very competitive where as a score of 1 indicates that the markets are monopolistic.

B) The Market Characteristics

As shown in (Fig. 4)

C) Local Language Software Market: Market Revenues (India), 1998-2005



Note: All figures are rounded; the base year is 2002.
Fig. 5 Source: Frost & Sullivan

D) End User Sectors:

Local Language IT applications are expected to find uses across a wide segment of the market viz in the Government, Private sector and Public enterprises. However, the extent of impact will not be uniform across these verticals. Frost & Sullivan evaluates the likely impact of Local Language IT on the key segments of the market.

• Education

The Government of India is likely to face multiple challenges in achieving the avowed goal of universalization of elementary education. The key challenges are:: stagnant expenditure on education as a percent of GDP, the adult illiteracy rate and the large school dropouts in the primary and the secondary education. The Indian education sector is facing challenges as a result of the change in the economic constitution of the world: world over, the knowledge segment of the economy is acquiring larger dimensions. These challenges mean that the Indian education sector will have to focus on fundamental quality and efficiency of the education output.

The real beneficiaries of the interactivity through Local Language IT will be the primary and secondary school students. A number of government and private initiatives have been forthcoming in this regard. However, the availability of budgets to set up a large-scale computing infrastructure will be the critical challenge.

• Publishing Segment

Indian is one of the world's most vibrant markets for books, newspapers and magazines. While a sizeable number of citizens are already in the category of "regular readers", the market is expected to continually grow because of the increasing number of educated citizens in India.

India has a large segment of vernacular language publications including books, newspaper and magazines. For example, India has 6,830 English-language and nearly 40,000 local language newspapers, although 34 newspapers control 76 percent of India's total circulation of 18 million and a combined readership exceeding 132 million. With the demand for books, magazines and newspapers is expected to grow, Local Language IT products will increase the opportunities to provide end to end solutions to the publishers in the form of desk top publishing and Local Language computing hardware.

• Small & Medium Enterprises

Small scale industries (SSI) produce 40 percent of the manufacturing sector's output and account for around 95 percent of industrial units in the country. While PC shipments to Small & Medium Enterprises (SME) have been falling, Frost & Sullivan expects this trend to be temporary . SME's have been late adopters of IT for multiple reasons: Lack

of appropriate applications, high prices of PC hardware and lack of relevant knowledge

Since the lingua franca of business that the proprietors of the SMEs employ is local language, Local Language IT has the potential to proactively increase the chances of IT adoption. Local Language accounting applications and ERP systems will be the leading applications that will drive the demand in the SME segment in India.

• Banks

Banking institutions have changed the rural and semi-urban economies by providing a channel for the movement of credit and savings in India. Co-operative credit institutions occupy an important position in the financial system of the economy in terms of their reach, volume of operations, and the purpose they serve.

To serve a wide section of the population in rural and semi rural areas, rural branches have deployed bilingual forms and are high users of documents in local language. Typewriters are employed on a wide scale. Local Language IT systems can replace these manual and semi-manual systems and thus provide banks and the citizens with the benefits of technology.

• Tourism

The tourism industry in India is increasingly driven by internal demand. Indians are traveling more often for business, leisure and for religious purposes, resulting in a thriving domestic tourism industry. Tourists depend on public media and advertisements to gain knowledge of tourist destinations. Cross-state travel can increase if knowledge sources such as web sites, brochures and literature are made available in state languages from where the travelers are expected.

E) e-Governance Initiatives and potential for Local Language Market:

There is an overall consensus on the benefits of e-Governance in India. While a wide variance exists between states in terms of their e-Governance initiatives, it is expected that over the medium term, a greater number of states will provide services to citizens over the electronic medium. Deploying Local Language IT as a part of State and Central e-Governance implementations will serve the cause of improving the reach and quality of services offered across a wide section of the citizens.

State Governments have deployed citizen services in local languages and the early benefits are clearly visible. Early Government-to-Citizen Portals such as eSeva have proved the feasibility of the model. Frost & Sullivan expects this trend to extend on both scale and scope: a wider bouquet of services will be available to a larger section of citizens. Andhra Pradesh is the state with the biggest spend on Local Language IT contributing 23.6 percent to the total market revenues for the Industry. Gujarat is the second highest spender followed closely by West Bengal.

Local Language Software Market: Percent of Revenues by State (India), 2002	Revenue State (%)
Andhra Pradesh	23.6
Gujarat	12.9
West Bengal	12.4
Karnataka	10.3
Maharashtra	9.9
Kerala	8.3
Rajasthan	6.4
Uttar Pradesh	5.5
Madhya Pradesh	5.3
Tamil Nadu	5.3
Punjab	0.2

Note: All figures are rounded; the base year is 2002. Fig. 6 Source: Frost & Sullivan

F) Strategic Recommendations:

MAIT-Frost & Sullivan Study expects that the State & Central Governments, the Academia & Research institutions, the Vendors and the Industry Associations will all play a proactive role in expanding the addressable market opportunity for Local Language IT in the years to come. Each of these four elements has a role that is influencing the evolutionary trajectory of the industry. Together these four elements form an ecosystem that will nurture the fledgling

Local Language Software Market: Total Spend on e-Governance in $ million by States (India), 2002

Project	AP	Maha	MP	Guj	WB	Karn	Ker	UP	Raj	TN	Pun
LR	6.25	6.25	6.25	-	6.25	6.25	3.13	3.13	3.13	6.25	-
LA	10.41	-	-	-	-	-	-	-	-	-	-
eseva	1.04	1.04	-	0.15	-	-	1.25	-	-	-	-
trans	0.1	-	-	0.21	0.21	0.21	-	0.21	-	-	-
Muni	0.41	-	-	-	0.21	0.63	-	0.21	-	-	-
Gov	4.38	4.38	-	13.33	13.33	-	4.38	4.38	4.38	-	-
Oltp	0.42	-	-	-	-	-	-	-	-	-	-
Fin	0.94	-	-	-	-	-	-	-	-	-	-
Proc	-	-	-	-	-	0.42	-	-	-	-	-
Hr	0.21	-	-	-	-	-	-	-	-	-	-
Welf	0.21	-	-	-	-	-	-	-	-	-	-
Police	3.33	-	-	-	3.33	3.33	-	-	-	-	-
vadodra	-	-	-	0.25	-	-	-	-	-	-	-
treaus	-	-	-	0.21	-	0.21	0.21	0.21	-	-	-
website	-	-	-	0.21	0.21	0.21	-	-	-	-	0.21
tax	-	-	-	-	-	0.21	-	-	-	-	-
insurance	-	-	-	-	-	0.21	-	-	-	-	-
environ	-	-	-	-	-	0.21	-	-	-	-	-
SSI	-	-	-	-	-	0.21	-	-	-	-	-
griev	-	-	-	-	-	-	-	0.21	-	-	-

Key:
AP = Andhra Pradesh
MP = Madhya Pradesh
WB = West Bengal
Ker = Kerala
Raj = Rajasthan
Maha = Maharashtra
Guj = Gujarat
Karn = Kanataka
UP = Uttar Pradesh
Pun = Punjab
TN = Tamil Nadu

LR=Land Record
LA=Land Administration
eSeva=Citizen Services in AP
Trans=Transportation
Munci=Municipal Corporation
Gov=Government Applications
OLTP: Online Transaction Processing
Fin: Financial Application
Proc=eProcurement
HR=Human Resources Mgmt
Welf=Social Welfare Mgmt Appln

Police=Police Application
Vodadra=Civil Administration Appln
Treaus=Treasury
website=G to C portals
Tax=Tax application
Insurance=Insurance application
Environ=Environment mgmt appln
SSI=Small Scale Industries appln
griev=Grievance

Fig. 7 Source: Frost & Sullivan Note: All figures are rounded; the base year is 2002

Local Language IT industry. The Study proposes a number of strategies for the various stakeholders:

Government

- The Government must create a web-based repository of best practices for content, software and language based applications and this must be available in the public domain (free);
- The State and Central Governments must be mandated to deploy Local Language interfaces on the citizens front/citizen services; and
- The Government needs to play the role of a catalyst and facilitator- it has to handhold and ensure technology transfer to the public and vendors. For the market to expand faster, technology adoption will need to be accelerated. Vendor and end user feedback will be required to be conveyed to R&D institutions.

Vendors

- Vendors need to ensure a wider availability of their products and solutions for their prospective customers. While traditional distribution channels need to be utilised, vendors will also need to ensure that their products are available with DGS&D (Directorate General of Supplies and Disposal) and Apna Bazars (or similar such channels) for easy purchase by Government;
- Vertical focused strategies are expected to fetch good returns. Local Language IT solutions for industry verticals will provide the depth to the solution and meet the unique nuances of the industry thus making it easier for buyers to get faster returns on their technology investments; and
- Vendors should exploit the exports market; to begin with geographical locations with high expatriate Indian population/population of Indian origin should be attempted. Export of products & solutions and the underlying technology to non-english speaking countries will give faster returns on the research and development investments.

Academia & Research

- A cohesive integration of the Academia and Research Institutions with the Local Language IT ecosystem is likely to positively impact the efficacy and efficiency of technology and product developments;
- The Academia and Research Institutions will have to adopt better management practices that not only lead to better project management of the R&D efforts but also lead to development of market feedback mechanisms;
- The Academia and Research Institutions should form alliances with the Vendors or bid for sponsorships from Vendors for Local Language IT application development;
- Academia and Research should take a lead in publishing local content from epics and other traditional literature.
- Finalization of standards at multiple levels, viz. for font, for script, for indexing and for hardware products should be taken up on an urgent basis.

Industry Associations

- Industry Associations need to facilitate smooth flow of information amongst all the players;
- Industry Associations can take up the mandate of evaluating and certifying language software; and
- Industry Associations will need to champion the cause of the industry with different stakeholders. Public conferences, leveraging mass media and establishing thought leadership will be crucial for the sustenance of the Industry.

About MAIT:

Set up in 1982 for purposes of scientific, educational and IT industry promotion, MAIT (www.mait.com) has emerged as an effective, influential and dynamic voice of the IT industry in India. Representing hardware, training, R&D and associated services sectors of the Indian IT Industry, MAIT's charter is to develop a globally competitive Indian IT Industry, promote the usage of IT in India, strengthen the role of IT in national economic development and promote business through international alliances.

About MAIT- COILTech:

Set up in 2002, the MAIT-COILTech is a consortium of IT companies engaged in development of Local Language Applications and products. The Technology Development in Indian Languages (TDIL) Group of the Deapartment of IT funds the consortium. The COILTech's charter is to handhold Language technology companies, help them in promotion at national and international levels and facilitate technology transfers. The MAIT-COILTech has successfully developed font standards (INFOC) for 7 Indian languages, while efforts are being made for the rest. Deficiencies in the Unicode with regard to supporting Indian languages have also been taken up with the International Unicode consortium and are soon to be resolved.

About Frost & Sullivan

Frost & Sullivan (www.frost.com) is an international growth consulting and training company headquartered in Silicon Valley. With a team of global analysts, it monitors over 200 industries – including the IT and telecommunications sector in India. Using its patented Market Engineering Methodology, a host of in-house analysts examine market measurements, strategies and trends to produce cutting-edge reports used by the business world for competitive intelligence.

The complete report on language technology may be reffered at www.tdil.mit.gov.in

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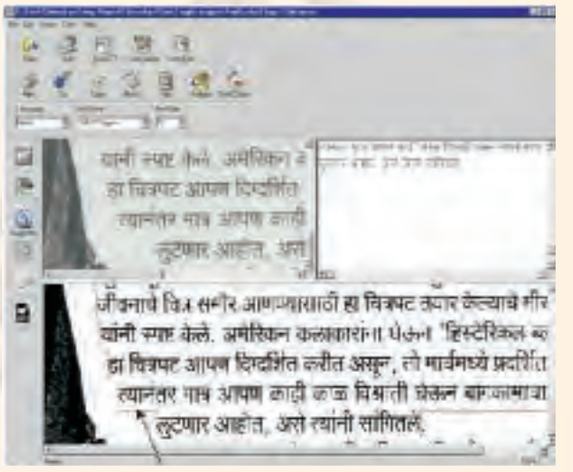
Chitrankan™ with its advanced DSP (Digital Signal Processing) algorithms will automatically detect the noise and skew in the image and remove it. This software will also take care of the irregular and regular images in the text while doing the recognition. Combined support for English and Indian language text will benefit the users who have a requirement of Bi-Lingual OCR software.



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(Courtesy : Centre for Development of Advanced Computing Pune University Campus, Ganesh Khind, Pune)