

Address during the inauguration of  
Language Computing Workshop  
Bhopal  
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## **Born Digital, Think Digital and Act in Language**

*“Innovation leads to Technology  
Technology leads to borderless world  
Borderless world leads to global prosperity”*

I am indeed delighted to participate in the inauguration of the Language Computing Workshop at Bhopal. I am happy to know that Govt of M.P. is organizing this workshop on language computing to expand the reach of IT in the state. My greetings to all the members presents here. I would like to discuss on the topic “***Born Digital, Think Digital and Act in Language***”.

### **Global knowledge local language**

Recently I came across a news article which highlighted the efforts to enhance the electronic knowledge based of wikipedia in multi-lingual content using the tool Wiki-Bhasha which would enable global encyclopedia to be available in local languages. Friends, this is the trend of the global IT industry where knowledge is increasingly unshackling itself from the boundaries of language, region and nation. Internet has connected the world in a common knowledge grid and multi-

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lingual computing will enable usage of this grid by even the remotest of villages of India and the world. Also, it will help spread ideas and innovations from one village to another thousands of miles away, each of them using their own local language.

### **Born Digital is the way for Language computing**

When we focus on Language computing, we need to think digital in local language, that means the computing systems have to be born digital in local languages. If it is Born digital – then what you create, what you process, what you deliver is all in the local language in digital form rather than English. Hence, text, data, SMS, Email, e-Books has to be generated in digital form in the local languages using Unicode and at the same time it has to flow and viewed also in the digital form. That means the native language has to be in Digital form for creation, modification and flow. This is the true language computing in true sense and will search and deliver in its own language. The next challenging aspect is the legacy vernacular documents, which needs to be converted into digital format and then through OCR (Optical Character Recognition) it has to be converted into Unicode format.

**Unicode Standard:** Unicode is the Universal Character encoding standard, used for representation of text for Computer Processing. Unicode standard provides the capacity

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to encode all the characters used for the written languages of the world. It provide information about the character and their use and it is useful for Computer users who deal with multi-lingual text. Unicode uses a 16 bit encoding that provides code point for more than 65000 characters. It assigns each character a unique numeric value and name. The Unicode standard and ISO 10646 standard provide an extension mechanism called UTF-16 that allows encoding as many as a million characters. Presently Unicode standard provides codes for around 50,000 characters.

This initiative will pave the way for creating large number of documents in vernacular languages get converted into digital content and will be available in the internet for easy access. Once the content are in local languages and the computing systems, mobile phones are born digital rather than mapping the language to English keyboards and fonts, then the internet is meaningful to the one billion plus population who speaks 18 different languages in India. If we need to promote the vernacular computerization particularly Hindi, we have to focus on the above Research and Development Missions to create born digital systems for vernacular languages and then create or convert millions of contents into Unicode digital format like English, German and French as it has a wider presence in the internet domains. Particularly, many of the Indian languages are getting

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prominence due to the birth of Unicode (Universal Character Encoding Standard), but the content development is the long way to go. It is very essential, that unified efforts have to be launched to increase content on the official languages of India.

Unicode will transform how the government is delivering the G2C services to the citizens in their own local languages. I visualize a farmer in a village near Bhopal using his mobile phone, accessing the agricultural extension services in Tamilnadu, such as the cost of the agriculture produce, market conditions, weather predictions, right type of advice on demand from the agricultural experts from the agricultural university for the pre and post harvesting practices through his mobile phone in Hindi, voice activated call service and get a response in Hindi itself from the Agriculture portal in a multilingual format.

When he wants to search and find out how to protect his or her crops from the devastating insects and what sort of pesticide to be used, he should be able to get the right type of advice on right time on his mobile phone. That will transform the citizens of this country marching towards the knowledge society, where the knowledge is power, competitiveness is the key to compete globally and the barriers of linguistic diversity are overcome. Certainly the IT systems which are born digital in local languages will enable and enrich the citizens of India

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to become a partner in transforming the society into a knowledge society.

### **The knowledge society in 21<sup>st</sup> century**

Let me now discuss with you, the profile of knowledge society which you are going to experience in the country next few decades in this century. The world in the 21<sup>st</sup> century will be a knowledge based society with multiple opportunities. I was reading a book, "Empires of the Mind" by Denis Waitley. This book gives what type of the new world which we are facing now? What was yesterday and what is today. I have modified certain points of the author to suit our conditions. I have also added a third line which relates to action of any institution or organization.

It specially says that ***"what worked yesterday, won't work today"***.

1. Yesterday – natural resources defined power  
Today - knowledge is power  
**Organization will be a powerhouse for knowledge**
2. Yesterday - Hierarchy was the model  
Today- synergy is the mandate  
**Organization will be enabler of intersection of multiple faculties towards mission goals**
3. Yesterday – leaders commanded and controlled  
Today – leaders empower and coach  
**Potential Leaders will be empowered through exposure to the needs of sustainable development**

4. Yesterday - shareholders came first  
Today - customers come first  
**Organization should inculcate sensitivity to "customer" needs**
5. Yesterday - employees took order  
Today - teams make decision  
**Organization can inject team spirit**
6. Yesterday - seniority signified status  
Today - creativity drive status  
**Organization is the breeding environment for creativity**
7. Yesterday - production determined availability  
Today - Competitiveness is the key  
**Competitiveness is powered by research and Organization should continuously focus, in partnership with universities, on how research can lead to continuous process improvements.**
8. Yesterday - value was extra  
Today - value is everything  
**Objective Value judgment to be introduced in our work**
9. Yesterday - everyone was a competitor  
Today - everyone is a customer  
**Organization should have customer orientation**
10. Yesterday - profits were earned through expediency  
Today - Work with integrity and succeed with integrity.  
**The need of the hour for any organization is ensuring transparency**

In the knowledge economy the objective of a society changes from fulfilling the basic needs of development to that of empowerment. The education system will be promoted by creative, interactive self learning – formal and informal education with focus on values, merit and quality. The workers instead of being skilled or semi-skilled will be knowledgeable, self-empowered and flexibly skilled. The type of work instead of being structured and hardware driven will be less structured and software driven.

Wherever I have addressed a group of young entrepreneurs, industrialists and technology leaders, one question was asked to me about the globalization and its significance in today's relevance.

Let me share with you some thoughts on Law of Development which relates to globalization.

### **Law of development**

I was studying the development patterns and the dynamics of connectivity between nations, especially in trade and business. As you all know the world has few developed countries and many developing countries. What is the dynamics between them and what connects them? Developed country has to market their products in a competitive way to different countries to remain as developed country. The developing country to get transformed into developed country;

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they too have to market their products to other countries in a competitive way. Competitiveness is the common driving factor between the two types of nations. Competitiveness has three dimensions: quality of the product, cost effectiveness and product is in the market just-in-time. Indeed this dynamics of competitiveness in marketing of products by developing and developed countries is the law of development. There is a relationship between the core competence and the competitiveness of the country. Such a law applies to individual companies as well. For competitiveness, innovation is the capital.

### **Innovation is the capital**

When I was studying the Global innovation report for the year 2009, I found that as per Global Innovation Index, South Korea is ranked 1; USA 2; Japan-3; Sweden-4; and India 15. There is a relationship between innovation index and competitiveness. Even though India is 15 in innovation index, our ranking in global competitiveness index is 49 in 2009-10. If India has to graduate from the present ranking in competitiveness index of 49 and become equal to economically developed nations (within the top 10), we should note that India will have to depend on the technologies derived from Indian science originality and improve its innovativeness index to better than 5. Hence, research is very vital, particularly, basic science which will result in the latest technology

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required for meeting Global Competitiveness by Indian organizations, institutions and industry.

Growth competitiveness is determined by the innovative ability of an organization, whether it is private sector or government. This innovation arises from institutional initiative and the R & D productivity of the firm, shaped by policies and nature of local institutions. National innovative capacity has to be the country's important potential for producing competitive products. Globalization and competitiveness leads to an interconnected economy. This requires the combined effort of researchers, technologists, production engineers and business leaders. For building competitiveness what you need is talent. Leadership grows talent.

Once we empower the citizens with knowledge in their own local languages accessible on their ear steps, not door steps through the mobile phones, certainly the creativity, innovation will blossom that will empower the people to become competitive in whatever they do. Certainly language computing has a major role to contribute for the national development. In that context, let me share with you what sort of India that we are going to realize by the year 2020. My visualization of the distinctive profile of the developed India before 2020.

### **Distinctive Profile of India 2020**

1. A Nation where the rural and urban divide has reduced to a thin line.

2. A Nation where there is an equitable distribution and adequate access to energy and quality water.
3. A Nation where agriculture, industry and service sector work together in symphony.
4. A Nation where education with value system is not denied to any meritorious candidates because of societal or economic discrimination.
5. A Nation, which is the best destination for the most talented scholars, scientists, and investors.
6. A Nation where the best of health care is available to all.
7. A Nation where the governance is responsive and transparent.
8. A Nation that is prosperous, healthy, secure, devoid of terrorism, peaceful and happy and continues with a sustainable growth path.
9. A Nation that is one of the best places to live in and is proud of its leadership.

### **Integrated Action for developed India**

To achieve the distinctive profile of India, we have the mission of transforming India into a developed nation. We have identified five areas where India has a core competence for integrated action: (1) Agriculture and food processing (2) Education and Healthcare (3) Information and Communication Technology (4) Reliable and Quality Electric power, Surface transport and Infrastructure for all parts of the country. (5)

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Self-reliance in critical technologies. These five areas are closely inter-related and progressed in a coordinated way, leading to food, economic and national security.

### **National ICT initiatives**

We have a national e-governance plan with twenty five-mission mode projects in G2C domain; we also need to implement G2G services across the governmental units. Also, State Wide Area Network (SWAN) has already been established for 19 states and UTs, and is in an advanced stage of implementation for the remaining 14 states. Computerization of over nearly 50,000 govt departments including district and subordinate courts are required to be completed. The software industry has to provide solutions for all these tasks within the next three years. Other major areas of activities for the ICT industry are establishment of PURA based village knowledge centers across the country for the 600,000 villages which will provide tele-education, tele-medicine, e-governance service, retail business and agri-clinics. 5000 Academic and Educational institutions are to be connected with Gigabit network through National Knowledge Network. Hence these are the challenges for the ICT industry in India. India has a plan to establish a Knowledge GRID, Healthcare GRID, e-Governance GRID and PURA GRID resulting into Societal GRID. This experience will be useful for replicating into other parts of the world.

All these national programmes, have social, research and technological content with substantial amount business opportunities using ICT as a tool. When these ICT missions are embedded with its local vernacular language content, language process, language view in digital, then the penetration of IT services will have an impact in the process of societal transformation like the way the mobile phone penetrated in to the half of the population of India. IT Industries and enterprises in India with their core competence can become partners with the Government in this mission of transforming the society through accelerated development and for creating prosperity equitably to the billion people in the country.

### **Conclusion**

Friends, I have presented on the missions for development, role model leaders and also the vision for our nation and the challenges, particularly, I have given the growth aspect of information and communication technology knowledge products and systems. What is the most important ingredient that will enable us to realize organizational and national goal. My study indicates, creative leadership is the most important. I would like to define based on my experiences.

1. Leader must have the vision for the organization.
2. Leader must be able to travel into an unexplored path.

3. Leader must know how to manage a success and failure.
4. Leader must have courage to take decision.
5. Leader should have Nobility in management.
6. Every action of the leader should be transparent.
7. Leader should work with integrity and succeed with integrity.

For success in all the missions, it is essential to have creative leaders. Creative leadership means exercising the vision to change the traditional role from the commander to the coach, manager to mentor, from director to delegator and from one who demands respect to one who facilitates self-respect. For a vibrant nation, the important thrust will be on the generation of a number of creative leaders who will pioneer the promotion of energy independence of the nation.

Certainly the Language Computing Workshop at Bhopal organized by the Government of Madhya Pradesh will pave the way for "**Born Digital, Think Digital and Act in Local Language**" movement across the country. I wish all success for the workshop on language computing to expand the reach of IT in the state and achieve the mission of promoting language computing. *With these words, I inaugurate the*

*workshop.* My best wishes to all of you in your mission for making knowledge transcend the barriers of language.

May God bless you.

