GTU INNOVATION COUNCIL

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A New Initiative

GTU-IT Infrastructure Abhiyan

(GTU-ITIA)

Computer Engg and IT projects
for
BE and MCA students

To Faculty Guides of

- the Final Year students of BE, who are looking for an IDP/ UDP for their Final Year project
- the Final Year students of MCA, who are to work on the Dissertation at the 5th Sem and project at the 6th Sem

You can get the following done by your students:

1. Select an MSME, which has not yet started using ICT in its operations. (You can seek the help of the Industry Co-Chair and the Directors from industries on your GTU Innovation Sankul Committee (SC), through your Principal/ director, who is a member of the SC.
2. Ask your students to visit it a few times(It would be better if you lead them at least a couple of times.), understand its processes and work out how ICT can help.
3. Develop a detailed Requirement Analysis and System Design. The deliverables will include SRS, Forms Design, Reports Layout, Algorithm Design (in case Algorithms are being used in the project). It should include the relevant diagrams out of Use Cases, Class Diagrams, Activity Diagrams, Sequence Diagrams, State Transition Diagram. Project size estimation using either FP or COCOMO model is also expected. / Prepare the design of the ICT system, which you think can help.
4. Validate the design in every possible way.
5. Implement your design, prepare test cases and obtain test data, work out the quantifiable benefits.
6. Prepare a Report.

If the Faculty Guide recommends, GTU will accept the work as the Final Year project work for the 7th and 8th semester work of BE students.

If the Faculty Guide recommends, GTU will accept the work of (1), (2), (3) and (4) as the Dissertation work of the 5th sem of MCA students. Then if the student completes (5) and (6) properly and if the Faculty Guide recommends, GTU will accept it as the Final Year project of 6th sem.

Note: The Appendix gives some of the examples about how the GTU Students can play a role in making MSME's IT enabled. For any query/inputs, please feel free to communicate with: Harshad.patel@gtu.edu.in, gic@gtu.edu.in

A Note on

GTU-IT Infrastructure Abhiyan

Introduction: Higher Educational institutions in technology and industries are either both innovative and are able to develop and products for the whole of the world. Or both are weak.

Either they are both strong. Or both may be weak.

Thus the educational institutions may provide parchments certifying a large number of graduates and the industries may produce many goods and may make great profits by borrowing technologies and by using cheap labour. But technologists, whether at a University or in an industry, have to be creative and innovative if their University or industry is to become great. He/ She has to be able to design products for solving the problems faced by the industries and by the society.

While doing industrial Shodh Yatra our students and faculties found that a large majority of SMEs/cottage industries /non IT industries suffer a huge loss of efficiency, since they do not use ICT. India's SMEs contribute 45% of industrial output, 40% of exports, employ 60 million people, create 1.3 million jobs every year and produce more than 8000 quality products for the Indian and international markets. A higher efficiency in SMEs will energize the growth of GDP.

About software industry in Gujarat: In Gujarat, the software industry does not have a large number of seats. GTU has nearly 15,000 Final Year students IT/CE/ CS in BE, DE and MCA streams.Hence it cannot provide IDPs to all our Final Year students of MCA and BE(IT/CE).

What is GTU-ITIA?: GTU-ITIA has been designed so that GTU's students

- may study the processes of our MSMEs (Micro Small and Medium Enterprises) and then
- design systems for use of appropriate ICT tools to help increase the productivity and the efficiency of these enterprises.

This will create a road for these enterprises to grow at a fast rate and to face the world of competition.

GTU-ITIA is for ensuring that every Final Year students in Computer – of both BE and MCA streams- gets a useful project, through which he/ she may be able to learn. GTU-ITIA will enlarge the market in Gujarat so that the number of seats in the software industry may have a step-increase.

The Protocol: Students and their project guides have to mutually decide such projects and in case of guidance they should consult HODs /Udisha Coordinators etc. Students while doing study of

requirement to solve these challenges are likely to learn the critical need of the users of our country which will mould them as a better engineer. Students while doing their Dissertation (DSRT)/Thesis *work* may take up such challenges where they can do some real world/technology learning and empower the ITIA mission.

We have got significant inputs from industry clusters who need to access such help and GTU Innovation Council is making efforts in that direction to tap all possible possibilities.

History: GTU is a public institution and it must work to break the vicious loop of small software industry sector leading to very small number of projects, being available from the software industry. It must help our MSMEs more efficient and more competitive. So GTU invited ICT experts, professors, sankul co-chairs, MSMEs, industry chamber authorities and ICT start ups for a brainstorming session. The session was chaired by Honorable VC, Dr. Akshai Aggarwal. It was decided that GTU should initiate the IT Infrastructure Abhiyan. As a first step it would help 1000 MSMEs/users, through the final year projects of students. Instantly during the meeting Shri Shaileshbhai Patwar,i President Naroda Industries Association , said that many SMEs at Naroda will need the support. He promised to extend all possible support. We have got excellent response from all other GIDCs and SME clusters too.

Appendix 1: Students during their project may be able to add value to the very common needs of an MSME in some of the following ways.

EXAMPLES:

- Simple and easy to use web based software applications for routine operations such as Payroll, Basic HR operations, statutory compliances, Invoicing, Customer follow-up, Materials handling, Purchases, etc. Development, hosting and maintenance to provide necessary training and handholding to the users.
- ICT facilities for small service providers such as hair cutting salons, flour mills, etc. Appointment management, online ordering, etc.
- Generic website templates – for quick configuration of MSME websites.
- Generic templates to make marketing materials, product demonstration videos, etc.
- Web-portals for Industry Associations to build synergy among MSMEs. Sharing of resources, Buy and Sell of surplus materials and equipments, Common Recruitment Pool, etc.
- Training on the use of advanced office tools such as Microsoft Project (for Project Planning and Management), Visio, Autocad, etc.
- ICT audit to analyze and prescribe the use of ICT for specific benefits.
- Web portals for efficiency enhancement and empowerment of MSME clusters connected through a supply chain.
- Online payment (by customers) facilities on usage basis for MSMEs.
- IVRS, GSM, GPRS hook ups for use by MSMEs.
- Common information base (website) for common needs of MSMEs. Govt. regulations, FAQs, etc.
- Transportation optimization (O.R.)
- Optimized product mix based on demands and margins of various products (O.R.)
- Minimization of waste while cutting out metal (or cloth or cable, etc) from large size sheets (cloth log or cable drum, etc.)
- Rich MIS generating early alert and guidance to top management