

PROBLEMS AND SOLUTION FIT FOR SMART FARMER - IOT ENABLED SMART FARMING APPLICATION

PROBLEMS/CHALLENGES:

Challenges faced in smart Farming, The main issue which slows the ability of farmers to profit from latest technologies is connectivity.

- Although there are more than ninety millions of Internet users, we do not have exact reports of the usage of Internet of smart phones by farmers for the purpose of agriculture. These technologies are used by vast agriculture companies and are not widely famous with rural farmers.
- The second and subsequent major challenge is awareness. An American research report states that amidst 1600 farmers, only 68% are familiar with IoT. These technologies will be more challenging in small land holdings and crop diversity compared to large farms.
- However, manufacturing and maintenance expense of these technologies will also be high. In agronomical farms, the software and hardware expense is soaring due to exposure to the unsympathetic atmosphere such as cold, heat, water, storm, wind, sand and physical dents.
- The consequent challenge will be to identify the suitable business model. Initiating IoT blindly will not provide success. An IoT business model has to be an essential factor for an agro goal achievement.
- The next issue is IT security. Devices should be secured against theft and wrong exploit as the prospect of farming predictions is possible, product pricing and expenses could also be manipulated and they should be monitored. The final challenge is trained human resources.

SOLUTIONFIT:

For the applications to be cost effective, interoperable and scalable, there should be several open architecture solutions from the aspect of IT design. Selected training should be provided to all farmers free of cost in order to make them comprehend the use of IoT devices.

- Awareness must be spread around the world for the development of Agro-Tech culture. Guidance and development of required human resources in suitable areas must be provided attention.
- By approaching the farmers with collaboration and open communication, investors of AI technologies and IoT will be able to provide a significant success to their companies, the farmers and agriculture in general.
- The fear of technology should be dispersed slowly but steadily. There were suggested that integrated collaboration such as “community of contributors” are required, in which the contributors include agriculture academicians, development experts, software, hardware experts, agriculture business practitioners, agricultural input suppliers, dealers and farmers.

This needs to be sanctioned by the government in order to establish a safe and legal practice and for the initiation and gradual development of this segment. There is a promising conception known as Smart Farming which is based on the management of farms with the aid of latest IoT devices in order to elevate the quality and quantity of products at the same time optimizing the required human employment. Smart Farming provides value to latest agricultural trends such as individual plant/animal/crop preservation, preserving high quality crop, cattle farming, breeding specific animals, family farming, and organic farming

.In this era, current farmers are able to utilize agricultural technologies such as the following: • Sensors: temperature, humidity, light, water, and soil management. •

Software: Tailor made solutions are available in software forms that aims to aid particular

farm types with the use of IoT platforms

- Artificial Intelligence: Processing facilities, autonomous tractors, robotics for farm management.
- Location: Satellite, GPS monitoring and recording
- Data analytics: Using data pipelining solution for down streaming, individual analytics solutions. With the help of above mentioned devices, connections, equipment and sensors, farmers will be able to monitor and record the status and procedure of their fields from home and generate strategic ideas for the development of either a single plant or the entire farm
 - Interconnection of smart devices and sensors integrated with information driven process to enhance farm utilization is a major positive aspect driven from IoT