

## AGRICULTURE 4.0 AND RURAL DEVELOPMENT

### Management tools to support farmers decision-making

#### KEYNOTE SPEAKER

Mark Gibson, is Knowledge Management and Communications Specialist at Teagasc. He manages a number of different programmes in Teagasc including: Teagasc ConnectEd, an agri-food industry development and networking programme, Teagasc Knowledge Transfer Scholarship Programme, Teagasc Open Innovation Programme. Mark has extensive experience in strategic communications and marketing. Mark previously served as an Environment Specialist with Teagasc where he coordinated the co-design and roll out of the National Agri-environment Planning software for professional. Mark was a member of a Ministerial advisory committee which developed a strategy to improve the uptake of ICT within agriculture and rural areas.



#### CHALLENGES

- Design approach needed;
- Farmer: Does solution save/make me money or save me time?
- Advisor: Can this technology help in decisions and target farm advice?
- Data capture –still a high effort part of process;
- High Speed Broadband must be prioritised;
- Data ownership –must develop and maintain trust –regulation and best practice;
- Public/private relations important – Digital Innovation Hubs.

#### PRESENTATION

At the outset of this session Mark Gibson reminded workshop participants of the exponential rate of evolution of digital technologies over the past century. In less than 50 years, the horse and plough have been replaced by self-driven tractors that have the capacity to cover hundreds of hectares per day.

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There are a number of important drivers of digital technology that we must both respond to and plan for.

In general, young farmers are highly competent and very comfortable with the use of digital technologies. This ease of use means that farmers are becoming more demanding for digital solutions that can improve their business. More digitally literate farmers are in a strong position to articulate the challenges they face to software and technology providers.

Given that agriculture in the EU highly influenced by policy, the commitment of the EU Commission to a digitisation agenda will have a significant bearing on the resources directed towards digitisation.

In my introduction I warned of the danger of information overload. This is an epidemic that must be addressed. European and national institutions and industry must become more coordinated in the way that information is disseminated. Communications must be tested for their usefulness to the end user and become more targeted. Digital technologies such as artificial intelligence and IoT have a lot to offer in this space.

The keynote presentation stressed the importance of adding value to the farmer. There is little point developing digital support tools that do not provide direct benefits to the farmer. Does it increase efficiency, save time and money for the farmer?

#### Putting the farmer centre stage

It is well accepted that products and services that are successful are those that accurately meet the consumers' needs in a timely manner. It is no accident that global corporations invest billions annually in developing insights about their customers' preferences and needs.

#### Data ownership

#### Opportunities for Digitisation

#### Making it easier to capture data

The days where farmers and their advisers spend hours inputting data into various systems are virtually over.



This is a major challenge for people who have opted for an outdoor career. Effort will need to be placed on the better use of sensors and reuse of data to eliminate the duplication of effort that is often involved in capturing data.

#### Real-time advice

The farm is an extremely dynamic environment to operate in. Farmers deal with a large number of variables on a daily basis such as weather, disease or prices. Decision support tools that provide real-time information are becoming an integral part of farm infrastructure.

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## MAIN OUTCOMES FROM THE DISCUSSIONS

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During the workshop it became clear that, if we want to develop tools that are useful to farmers it is crucial that farmers are placed at the centre of the design process. There are many proven co-design and co-innovation methodologies that should be exploited to ensure that digital management tools accurately meet the needs and preferences of farmers.

It was also noted that the development of decision support tools using multiple actors tend to be more successful.

The issue of data protection was raised throughout the workshop. Digital tools are, in the main, now cloud based therefore trust is a real issue for the industry. Who is using my data, who has access. The new data protection rules will also present challenges for the way data is fused and shared.

Standardization of languages between systems was seen as a way of enabling easier capture of data thereby creating an environment for better communication between devices and tools.

Big data and IoT will support the proliferation of these types of tools and further research is required in this field.

It is often easier to produce a complex solution than a simple one. It takes time to simplify tools but this investment will yield wider engagement with tools. Digital strategies must take account of this reality and allow the correct amount of time from idea to deployment.

One of the keynote speakers at the plenary session said that if we want to go fast we should go alone but if we want to go far we should go together. This sentiment was echoed during this workshop.

## INNOVATION PROJECTS

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At this thematic session, each participant assisted to the presentation of 3 of the following posters:

- **AWARTECH** - Animal Welfare Adjusted Real Time Environmental Conditions of Housing;
- **CAPSELLA** - Collective Awareness Platforms for Land Management based on Data Technologies and Agro-biodiversity;
- **FERTINNOWA** - Transfer of INNOvative techniques for sustainable WATER use in FERTigated crops;
- **FitoAgro** - Methodology and tools for a better management of new key pest of the pear and apples in the West region;
- **GEO SUBER** – Cork oak monitoring;

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- Integration of IRRINET with a fertigation software program;
- **ModelVitiDouro** - A model for viticulture in the Douro Wine Region;
- **ProTomate** - Development of new forms of support to the management of tomato crops to enhance quality of the final product (advice based on models and IT tools);
- **SMART-AKIS** - European Agricultural Knowledge and Innovation Systems towards innovation in Smart Farming;
- **SEMS** - Smart Economic Monitoring Systems of production and operation costs related to precision and high mechanization
- **VIGISPORES** - development of a decision support system for the management of three fungal diseases on shallot

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