

MetWEB

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Organisation: Met Éireann (Irish Meteorological Service)

Country: Ireland

Level of government: Central government

Sector: Public order and safety

Type: Communication, Digital, Public Service

Launched in: 2013

Overall development time: 14 month(s)

Link to the innovation's website

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Description

MetWEB is a closed, password-protected website for the delivery of tailored meteorological products to government and other public service agencies to assist them in their task of ensuring public safety and contributing to economic development. The products are tailored after close consultation with each client organisation to help determine their needs, and training in the use and interpretation of the meteorological products is offered to users. This innovation allows Met Éireann to efficiently deliver high quality weather information to a wide range of public agencies (currently 31 agency clients, encompassing about 900 individual users) in a timely manner. The system marks a move from a paradigm where a forecaster prepares a bespoke forecast for each client to a system where the information is presented directly to clients in a manner which matches their specific needs, and which they are trained to interpret as an aid to their decision-making process. Thus the innovation greatly increases the efficiency of the distribution of meteorological information, and it closely follows the guidance from the World Meteorological Organisation on achieving high-quality service delivery.

Why the innovation was developed

- Met Services have a vast range of weather information available to them “in-house”. Typically the IPR for this information is not owned by the Met Service (it comes from other countries) but while it often cannot be made publically available, there is agreement that it can be used to support the “public task” of government.
 - MetWEB provides a platform whereby weather information can be delivered operationally, in an automated fashion, to a wide variety of government and public-service agencies, without the need for a forecaster to interpret the data and prepare a bespoke forecast text. It uses the powerful graphical tools nowadays available to render attractive and meaningful weather imagery for users.
 - A key element is discussing with the users in advance what their exact needs are, and tailoring the products to meet those needs; each user only sees the range of products which they have requested, cutting down on unnecessary scrolling etc. Training the users in the understanding and interpretation of the products is also a vital component.
 - The innovation allows a wide range of public service agencies to benefit fully from the wide range of high-quality weather information nowadays available.
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Objectives

Develop staff capacity, Improve effectiveness, Improve service quality

- The objectives of the project were to achieve a greater dissemination of timely and relevant weather information to public bodies to aid them in their decision-making related to their public task.
 - As the range of different public bodies was considerable, so also was the range of their needs and care was taken to meet with each in advance to fully understand their decision-making processes so that appropriate weather information could be provided in support of those processes.
 - User consultation, user-tailored design, training and the seeking of active feedback were all important elements in identifying the specific objectives with each separate user.
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Main beneficiaries

Civil Society, Government bodies

- 31 different public organisations served; Approx 900 individual users; Garda (police) are key users
- Army / Navy / Aer Corps; Marine safety organisations; Sea Fisheries protection
- Roads authorities; Electric power utilities; Irish Water
- Office of Emergency Planning; Dept of Agriculture; Forestry authority
- Local authorities (10 currently); Airport Authorities; Environmental Protection Agency

Results

Efficiency

- A total of 130 separate meteorological products are generated and updated automatically for access by clients.
 - To provide this level of service through the manual preparation of forecasts would require a staff of between 20 and 30 forecasters, which would more than double the current forecaster complement in Met Éireann.
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Effectiveness

- Diffusing tailored weather information to a broad range of public-sector client organisations allowed Met Éireann to greatly increase the range of clients to which it provided services, and to broaden also the range of products which it could provide.
 - As many of the user organisations have a 24/7 capability (and requirement for detailed weather information) it was important to design the system to automatically update products when new information became available and to be very resilient.
 - No formal survey of users has been undertaken but informal feedback has been very positive, and many new users contact us having seen the service in use in a sister agency.
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Service quality

Accessibility:

- Resilient website, available 24/7.

Responsiveness:

- All products designed in conjunction with client organisations and adjusted as possible following feedback.

Reliability:

- Downtime less than 1%.
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User satisfaction

- No formal user surveys but many informal indications of satisfaction from users.

Development

Design

The idea for MetWEB originated in discussions between the Head of Forecasting and the Head of Applications Services in Met Éireann on how best to use the powerful graphic tools now available to deliver weather information to key public-sector clients, and how to broaden the base of users for quality weather information within the public sector. It was clear that the full benefit of information available within the national Met Service was not being transferred to public service agencies; specifically those with a mandate related to public safety. The project closely followed the concepts and ideas expressed in the “Strategy for Service Delivery” developed by the World Meteorological Organisation, and was an attempt to implement this strategy in a concrete manner. It is more than just a website; key concepts included close collaboration with users in advance to discern their needs clearly and to design products appropriate to those needs. Training of users and feedback were important elements. The concept that each user would only see those products of use to them was an attempt to cut down on, or eliminate, unnecessary searching through the web pages. Design time: 4 month(s)

Testing

- Decision made to work with one key client at first in the pilot phase.
- This client was fully aware of their “guinea pig” status and provided very valuable feedback on prototype pages.
- As new clients were added, care was taken to stay in close touch with them to encourage feedback and either adjust existing products or develop new ones in response to their needs.

Testing time: 4 month(s)

Implementation

Tools used:

- The visualisation and graphic presentation of the weather information was largely achieved using the IBL Visual Weather system, which is the standard in-house visualisation system used in the forecast office.
- A web interface was developed using the Joomla framework for the organisation and display of these graphic images, and to take care of user authentication, security etc.
- The website is hosted on a virtual server in the “cloud” rented from an external vendor.

Resources used:

- The development phase employed two persons full-time for approx. one year, and two persons part time (circa 30%) for the same period. The operational phase employed three people part-time (respectively approx. 70%, 30% and 20% of their time).
- The only direct (non-staff) cost is the hosting of the website on an external virtual server which costs in the order of €1,000/annum.

Implementation time: 6 month(s)

Diffusion

- Presentations have been made at international conferences.
 - The project has been introduced at user groups.
 - It has also been publicised at other gatherings of National Met Service personnel with emphasis on how well it has been received by the user community.
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Challenges and solutions

- The principal technical challenge was to evaluate a number of possible web interface frameworks and to select the one most suitable to the needs of the project. This process took approximately six months and the Joomla framework was eventually selected as the best fit.
- The main organisational challenge was to elicit from users what their specific needs were. They often did not know what to ask for, as they would not be familiar with the full range of weather information available. Often the best approach was to understand the decision-making process of a user and then advise them as to the products which could best assist them in their work.
- Other challenges revolved around maintaining adequate staffing levels to keep up momentum on the project as the Irish public service was going through a down-sizing phase at that time.

Lessons Learned

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- Be proactive in going out to seek users.
 - Try to understand the users' decision-making processes; don't just ask them what they need as frequently they will not know themselves.
 - Use a trusted client as a "guinea pig" to test out the service before offering it to other users.
 - Make sure the software and hardware is as close to 100% resilient as possible before launching the service.
 - Provide training to users in the interpretation of weather products and seeking regular feedback.
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Conditions for success

- Good technical capability and support.
 - User-driven focus to all aspects of the service.
 - A desire to work proactively with users.
 - Adequate staff resources.
 - Clear vision and leadership.
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Other information

Web-based projects are often seen as being primarily technical challenges by an institution, whereas the human aspects are all-important, but often neglected. Met Services have a need to be more service oriented, and this project was a specific attempt to design a service around users' needs, albeit that the users were themselves public-sector agencies. The project also greatly leveraged the value of meteorological information available to the state by making it more widely available, and in formats which could be readily understood and used by clients.

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