Supporting on-vineyard decisions with VitiApp

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About VitiApp
- VitiApp is a pre-commercial web-based application for supporting decisions about vineyard management.
- Environmental data (weather, soil) are used to describe conditions influencing grape yield and fruit composition.
- Cloud computing is enabling integration of multiple data streams from a diversity of environmental sensors.
- The Sense-T data platform (www.sense-t.org.au) ingests observed and forecast time-series data from the Bureau of Meteorology and integrates data from third party on-vineyard sensors.
- VitiApp accesses these data to provide vineyard patch-specific awareness of weather-based risks for each selected management issue: botrytis, powdery, downy, frost, chilling, heat and heat accumulation, wind, rainfall, soil moisture and/or spraying conditions.

Features
- Information displayed according to the patch and issue of interest, only when the issue is active, and with links to issue-relevant websites and publications.
- Data exploration through overlays of time-series graphs for multiple phenomena or growing seasons.
- Warnings when user-specified thresholds exceeded (e.g. temperature during a frost event).
- Alerts delivered by SMS, email or via the app.
- Time-series data can be exported (csv file).
- Sharing of photos, text and screen shots via the app or preferred social media.

Future R&D and delivery
- Beta version being tested by selected users accessing data from Tasmania.
- Data structure relevant to each patch.
- Actual or Virtual sensor data may be created e.g. temperature from on-site probe and rainfall from a local Bureau station.

Data Structure
- Users specify one or more vineyards, patches and the management issues relevant to each patch.
- Each management issue is allocated a group of sensors providing relevant data.
- Virtual sensor groups may be created e.g. temperature from an on-site sensor group.

Benefits
- Iterative evaluation of VitiApp by industry participants revealed how, in broad terms, it will enable better vineyard management (Evans and Cabral 2015).

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<thead>
<tr>
<th>Technological enabler</th>
<th>User feedback (example)</th>
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<tr>
<td>Enabling nuanced understanding and control</td>
<td>More pro-active when armed with better information, less reactive</td>
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<td>Experts and non-experts gain new insights</td>
<td>We might start seeing patterns we have never seen before</td>
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<td>Strengthening relationships between entities with data</td>
<td>Good, up-to-the minute data helps you justify your decisions to management (extra labour, materials, logistics)</td>
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<td>Greater efficiencies and less work-related stress</td>
<td>Enables remote monitoring which might reduce stress associated with not being on site</td>
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VitiApp is expected to be ready for commercialisation early in 2017.