Farm Business Management: The Fundamentals of Good Practice

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Chapter 16

Farm Computing and Software

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LEARNING OBJECTIVES

Review your understanding of the principles of how computers operate.

Discover something of the management tasks possible with currently available software.

Learn about practical computer operations.

Think about where computing might lead farm managers as the years roll by.

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The Farm Computing Scheme

Increasingly farmers are relying on computers to assist with management.

Computers come in many forms: desk top, hand-held, smart phones, units in machinery.

Computers have facilitated a significant change in management system possibilities compared with 30 years ago.

Computer system basics (see Appendix A6, this volume):
- hardware: managed by operating system, memory (ROM, RAM) disk storage;
- software: application controlling instructions (developments continue leading to lower costs).

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Typical Farm Computer Use

Survey data reveals:

Function	Use/month (hours)
Recording financial transactions	7.36
Forecast budgets and cash flows	2.58
Animal recording	3.67
Field/paddock recording	3.52
Word processing	3.83
Searching the Internet	3.91
Sending emails	3.91
Internet banking	2.94
Internet purchasing	1.70
Education and entertainment	7.25
Other	12.13
TOTAL	48.89
Handheld device	8.0
Broadband use	17.71

This is similar in most countries: about 90% of farmers have computerized.

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Software: The Basics

Using general packages: management systems with spreadsheets and databases. Farmers can create their own or purchase off-the-shelf codings (or borrow).

Using specialist software packages: packages available for a range of functions. Coded instructions are prepared by computer scientists. Systems often specific to each country to meet local rules etc.

Software types: available for most of the systems and procedures covered in the analytical chapters in this book.

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Software Types Available (1)

Financial systems	Physical recording	Environmental systems
• budgeting/cash flow/overdrafts • financial recording (every transaction) • payroll; • invoicing/billing • analysis of records • tax systems (e.g. VAT) • all units need to be integrated.	• individual animal records (e.g. identification, production, events) • field records (e.g. yields, inputs, cultivation, spraying) • integrated mapping systems • electronic connections to assist (scales, pasture meters) • machinery functions.	• record parameters (electronic monitors: e.g. N, weather) • soil water budgets, pollution simulators.

Software Types Available (2)

Advanced analysis systems to assess farm systems	Statistical packages (mainly used by consultants and researchers)	General
• mathematical programming • operations research systems (e.g. critical path analysis) • packages to allow farmers to interface with advanced systems.	• comparative analysis (benchmarking) significance testing • equation estimation (e.g. regression) • survey data analysis.	• psychometric testing (e.g. personality, management style) • investment analysis calculations • precision agriculture applications using electronic monitoring data • computer-aided drawing (CAD).

Farm Computing Operations

Apps (short for applications)

- software packages for smart phones (hand-helds);
- increasing uses emerging (e.g. weed identification).

Cloud computing

- offsite data storage;
- offsite storage of downloadable applications readily available (always the latest version);
- reliability and back-ups.

Professional computing (efficient operations)

- keep diary of operations and activities;
- maintain three back-up versions;
- computer maintenance housekeeping (e.g. file deletions, defragging).

Software selection

- rigorous process important;
- list required specifications, testing;
- training courses and help systems availability.

Future Developments

Daily decision making help required: management and control systems.

Automation

- sensors in many corners of farms and operations;

- integration of systems to give seamlessness;

- turn on and forget: reminders given;

- automated data entry (e.g. bank, purchasing, selling).

Thank You

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