

mTuitive xPert System™ For Healthcare: Executive Overview



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mTuitive is one solution for two goals: standardizing medical practice with protocols and delivering contextual knowledge to the practitioner at decision time. With mTuitive xPert System™, experts in medicine, nursing, compliance, and public health can convert their knowledge into an expert application that guides their fellow practitioners through the common tasks of daily practice – with a leading expert by their side.

mTuitive, Inc. has coined the term “user-centered expert system” to describe our products, xPert System for Tablet™ and xPert System for Windows™. The system incorporates human factors engineering (user-centered) and useful artificial intelligence techniques (expert system) to provide solutions for data collection, structured documentation, and decision support in healthcare.

An xPert Application™ is the result of knowledge engineering performed by mTuitive, our partners, or our customers using the xPert Authoring Environment™. The xPert Application™ provides an intuitive decision tree created according to a human expert’s guidelines, and makes all the knowledge the expert sees fit available to the user in the form of standard data elements, alerts, and reference materials.

mTuitive Helps Practitioners

An end user uses an xPert Application™ for anything from simple data collection to complex decision support. In both cases, the user follows a guideline or protocol created by an expert at the task. The user quickly taps or clicks through the protocol, writing or typing free text only when absolutely necessary. The application guides the user down different decision paths, alerts the user to possible errors, and delivers the knowledge most useful to the user depending on the context.

At the point of care, xPert Applications™ provide healthcare practitioners:

- a single, fast, straightforward way to enter findings
- clinical decision support
- context-sensitive access to useful literature at the point of care
- a convenient way to follow clinical protocols and guidelines

mTuitive Helps Health Information Managers

Highly structured databases and well-constructed knowledge management systems often suffer from a lack of user acceptance. In order to be effective, the database needs high-quality, structured data in real-time and the knowledge management system needs to put information into the hands of users who need it, when they need it. An mTuitive xPert Application™ is the glue that “sticks” your users to the habits of entering the right data

and searching for the right information, because it does the work for them as they perform their usual tasks.

Health information managers will find that mTuitive xPert Applications™ are quickly accepted by end users because they are easy to learn and use. Unlike traditional applications, xPert Applications™ offer the user something in return for their time – recommendations, guidelines, reference materials, and more, in the context of the task.

xPert Applications™ allow health information managers to:

- let the medical experts define protocol-driven applications
- rapidly convert paper processes to electronic
- rapidly update electronic processes
- update information systems in real-time from the point of care
- deliver valuable knowledge resources -- proprietary intellectual property, paid subscriptions, or public Web resources -- to end users when they need them

mTuitive Eliminates Variability

One of the biggest problems in medicine is variability of methods in practice. By following accepted guidelines, practitioners not only follow the advice of the best in the field, but also provide a consistent means of measuring results.

xPert Applications™ direct practitioners through protocols or guidelines as they enter their findings, so that two tasks are combined into one. This makes it easy for the practitioner to follow recommended guidelines. The result is a consistent way of treating a given condition, and a consistent way of communicating the findings. xPert Applications™ fit all of this naturally into the practitioner's standard workflow. This means better treatment for the patient, reduced likelihood of errors due to variability in treatment or communication, and better data with which to assess the effectiveness of a particular diagnostic or treatment protocol.

Converting Knowledge into xPert Applications™

The formula to rapidly deploy an xPert Application™ requires four key elements:

1. The **xPert System™**: mTuitive's core intellectual property -- a sophisticated expert system that is the platform on which xPert Applications™ are built.
2. The **xPert Authoring Environment™** ("Authoring Environment"): the visual tool used to import the expert knowledge and apply the required business logic rules. This ensures quick and easy development and deployment of your xPert Application™, without programmer intervention.
3. A **domain knowledge expert**: the subject matter specialist, provided by our clients and partners as the source of expertise.

4. A **knowledge engineer** works alongside the domain knowledge expert to codify the expert's knowledge in the form of rules that will be used by the xPert system. mTuitive, our customers, or our consulting partners can serve as knowledge engineers.

Unique Business Model

mTuitive has an open partnership approach to developing xPert Applications™. Often, mTuitive will license the xPert Authoring Environment™ to an institution that wants to market its own intellectual property. mTuitive can provide an organization the infrastructure, security, and tools to distribute their own xPert Applications™, either hosted or onsite.

xPert Authoring Environment™

For IT professionals concerned with knowledge management and structured data entry, mTuitive provides a user-centered expert system that unifies data collection, decision support, and knowledge delivery into a single easy-to-use application. Unlike today's forms builders, mTuitive integrates knowledge and expert guidance into the user experience, which is entirely customizable by domain experts without programming.

End customer: Healthcare and Public Health IT

Product: Visual tool used to build xPert Applications™ that unify data collection, decision support, and knowledge delivery. Features include:

1. Drag-and-drop designer
2. Import wizard to convert Word, Excel, and other text documents the xPert System™
3. Rules wizard to define application behavior, alerts, and knowledge delivery
4. Content linking makes it possible to drag-and-drop reference materials into an xPert Application™ from the Web, intranet, or local folders
5. Deployment to mTuitive xPert Content Server™ for automatic distribution to xPert System™ users

Reasons to upgrade

- Today's automation and forms tools don't integrate knowledge and expert decision making capabilities
- Output is provided in a structured format with data elements stored individually

Differentiators

- Whole package fits smoothly into user's workflow.
- Usability and intelligence is author-able by subject matter experts

xPert for Pathology™ (one example of an xPert Application™)

For hospital cancer programs who must comply with CAP and ACS tumor reporting protocols by January 1, 2004, mTuitive's xPert for Pathology™ is a Tablet or PC application that pathologists use directly to make their diagnosis more rapidly and safely than with dictation. Unlike traditional anatomic pathology systems, xPert for Pathology™ produces structured data that can be consumed by tumor registry databases and other systems

End customer: Surgical pathologist

Product: a decision-support tool that automatically builds CAP-compliant synoptic reports and stores structured data. Features include:

1. Simple, intuitive decision tree interface
 - Tap-through pick lists for rapid, consistent entry of standard data elements
 - Constant, unobtrusive retrieval of the most appropriate reference materials
 - Expert system that intelligently analyzes data as the user enters it
 - Intelligent synchronization of application templates and data
 - Ability to work connected or disconnected, unlike web applications

Reasons to upgrade

- Tremendous value in collecting and storing individual data elements for data sharing and research purposes.
- Simple, effective, inexpensive way to comply with ACS tumor reporting mandate
- Today's systems are too hard for doctors to use

Differentiators

- Structured data for automating data entry chain
- Filtered knowledge delivery
- No typing required

Examples of xPert Applications™ in development

These are just a few of the xPert Applications our partners are developing. This is not a comprehensive list.

1. JCAHO Compliance
2. Pre- and Post-Operative Surgery
3. Emergency Room
4. EMR Conversion

