Information systems solving knowledge problems are made available to knowledge workers and knowledge seekers. Artificial intelligence is applied in these systems. Expert systems, decision support systems, document management systems, intelligent search engines, and relational database tools represent some of the technologies and techniques developed to support Stage 4.

Officer-to-application systems will only be successful if they are built on a thorough understanding of law enforcement. Therefore, this chapter concentrates on presenting two important knowledge application tasks in police investigations: profiling and “cross-check.” Offender profiling and cross-check in police investigations are examples of law enforcement work that can benefit from technologies such as artificial intelligence, knowledge-based systems, and case-based reasoning systems (Becerra-Fernandez, Gonzalez, & Sabherwal, 2004).

Artificial intelligence (AI) is an area of computer science that endeavors to build machines exhibiting humanlike cognitive capabilities. Most modern AI systems are founded on the realization that intelligence is tightly intertwined with knowledge. Knowledge is associated with the symbols we manipulate.

Knowledge-based systems deal with solving problems by exercising knowledge. The most important parts of these systems are the knowledge base and the inference engine. The former holds the domain-specific knowledge, whereas the latter contains the functions to exercise the knowledge in the knowledge
Stage 1
Officer-to-Technology
End-user-tools

Use of IT tools that provide personal efficiency (e.g., word processing, spreadsheets, presentation software, etc.)

Stage 2
Officer-to-Officer
Who-knows-what

Use of IT to find other knowledge workers (e.g., intranets, yellow-pages systems, e-mails, staff profiles, etc.)

Stage 3
Officer-to-Information
What-they-know

Use of IT to provide access to stored documents (e.g., databases, contracts, articles, photographs, reports, etc.)

Stage 4
Officer-to-Application
How-they-think

Use of a specific IT system designed to solve a knowledge problem (e.g., expert system, business/criminal-security intelligence, etc.)

Figure 1. Officer-to-application systems at Stage 4 of the knowledge management technology stage model

Level of IT supported knowledge management in law enforcement

Time in years
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