Perceptions and adoption of technological innovations in UK public safety organizations: the case of introducing location services in the police

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Perceptions and Adoption of Technological innovations in UK Public Safety Organisations: the Case of Introducing Location Services in the Police

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Innovation Meanings: Korteland and Bekkers (2008)

• Political Level
  • Power relationships determined by the institutional context, collective frames of reference, accepted cultural norms; Legitimisation of innovation.

• Functional Level - Rogers (2003)
  • Relative advantage, compatibility, complexity, trialability, observability, reinvention

• Institutional Level - Attewell (1992), Fichman (1992)
  • Absorptive capacity: ability to identify, recognise, acquire, assimilate, and apply new information to productive ends.
Activity Theory and Innovation Activity

• Activity as unit of analysis
  • analysis of standardized, habitual work-related behaviour
  • enduring patterns of object-oriented activity
• Innovation activity: innovation activities regarding LocTech.
  • Situated within a network of activities involving national implementation of TETRA (TErrrestrial Trunked Radio) standard.
  • Force Alpha acquired TETRA (radio communication services) and considered other technologies e.g. LocTech
Activity System

- Individual (subject) doer
- Social (community)
- Physical (object) environment
- Tools
- Norms and rules
- Division of labour
- Disturbances and Contradictions
Innovation Activity

Political, Functional and Institutional Motivation

Goal

LocTech Innovation Activity

Action

Communication Meetings
Formal process
Protocol for use of LocTech

Partial Adoption Outcomes

Results

Project Board

Operations

Functional and institutional efficiency improvement

Civilian norms
Uniformed service norms
Right to privacy

Command and Control staff
Other departments
UNISON
Police federation
Suppliers

Division of Labour

Instrumental Conditions

Behaviour
Innovation Activity System

• Conformity with the national mandate (political motive)
• Optimisation of TETRA use in addition to two-way radio (functional motive)
• Improved deployment by CC and related supervisory processes (institutional motive)
• Improved functional and institutional efficiency (object)
• PB (subject): Deputy Chief Constable (head), management staff (Chief Superintendent, head of Finance Department, a civilian PM), two CC Chief Inspectors
• Community: suppliers of CC system, suppliers of LocTech, IT department, other departments
Mediating artefacts

- communication suppliers, IT department and other departments
- formal innovation process (business case, pilot)
- PB authority and autonomy

Rules and norms

- no government/PITO/NPIA legislation, nor guidelines
- civil rights and employees’ right to privacy
- civilian organisation norms and norms in uniformed, hierarchical organisations

Division of labour

- PB representatives of different departments who linked the innovation with competencies of respective departments
- IT department (unrepresented on PB)
**Action 1: Initiation of the LocTech project**

**Goal 1: Specify ‘user requirement’**

**Result 1: ‘User requirement’ written document**

Innovation concept -- ideal technology complementing nationally accepted TETRA system and enhancing efficiency of policing operations.

- PB commissioned for introduction of location technology.
- Visiting other Forces and individuals there
- PM liaising with people within Force Alpha
- Producing ‘user requirement’ in the form of a written document.
Action 2: Procurement

Goal 2: Verifying the functionality of the technology

Result 2: Procurement of LocTech technology

- verify compatibility with other systems
  - CC system suppliers -- interface receiving LocTech geographical coordinates over TETRA, visualising to show location
  - compatibility of LocTech with mapping software (running at back-end of CC system) was NOT verified
- invited potential suppliers of LocTech; chose one
- purchase approved by the senior management
- in cooperation with the IT department, suppliers set up system, installed it in few cars.
- CC suppliers reproduce interface
- PB proceeded with small scale pilot. Demonstration of the system NOT a test regarding its introduction
- It was certain that the new technology would be fully implemented in Force Alpha. Agreed to by PB with members from senior management.
Extending institutional innovation motives

- Fleet management tool improving supervision
  “Are they patrolling in the areas where crime is taking place? … Are officers just aimlessly just driving around and around in circles? Is there any sort of pattern to the way they’re driving? Are they being intelligence-led?” (Controller Inspector)

- Tool recording compliance with existing (internal) policies, health and safety regulations

- Tool for public accountability
  ““Can you tell me how many times a Force Car has driven down my road in the last three months?”… we probably have no response to it but LocTech is a source of providing this kind of information” (Project Coordinator)

“It will be used… it will be a case of “yes, this vehicle travelled this particular route”. (Sergeant)
Action 3: Full Implementation of LocTech

Goal 3: Deployment of LocTech throughout the operations of Force Alpha.

Result 3: Establishment of digital maps incompatibility.

Deployment of additional screens in CC rooms

- full implementation of location technology
- installation of devices in all vehicles
- issues of integration of LocTech with CC system digital maps
- temporary resolution by fitting additional screens in CC
- Permanent resolution would have required considerable (unbudgeted) expenditure, decisions on IT strategy and policy
Action 4: Roll-out towards CC staff

Goal 4: Improved location information at CC, extending use of TETRA


- PB communicated their actions regarding LocTech to employees (mass email)

“It just came… that was it; BOOM. No explanation to what it was, it just appeared.” (Controller Inspector)

- PB did not strictly adhere to the formal process
- Concerns among employees
- PB initiated discussions with the Police Federation and UNISON
- UNISON did not comment, noted in use protocol, CC staff not able to voice concerns
- CC staff professed that no guidance was given about the implementation
- Perception that non-involvement of users would become common practice
Action 5: Conflict resolution and introduction of LocTech in other departments

Goal 5: Conflict resolution with Command and Control room staff and introduction of LocTech in other departments.

Outcome 5: Partial use in Command and Control rooms and in other departments.

• PB members requested (directly and indirectly) CC staff to operate LocTech
• Seniority of PB members affected CC actions
• PB asked all interested departments to explore LocTech use in practical terms
• Installation of screens elsewhere than CC rooms (3 departments)
Discussion

• Motivation and Meanings at the different stages of Innovation
  Political (primary motive) → Functional, institutional (procurement) →
    Political (implementation, roll-out) → Institutional (conflict resolution)

• Innovation Contradictions
  Tension between CC staff and PB

• Innovation Outcome: equivocal, partial adoption
  Institutional: LocTech availability across departments
  Functional: LocTech not fully integrated with CC systems
  Political: compliance with TETRA, conflict resolved