

# Haggle: Networking Architecture for Mobile Devices



## Haggle Layerless Network Architecture

- New device architecture enabling applications to be infrastructure-independent
- Designed for “Pocket Switched Networking” environment: mobile humans’ devices
- Layerless architecture comprising six “managers”

**Data Manager:** persistent object storage for applications, as well allowing them to register an interest in incoming objects matching a filter

**Name Manager:** allows apps to specify and access trees of names, e.g. “James Scott” is a parent node for his laptop’s MAC address and for his email address

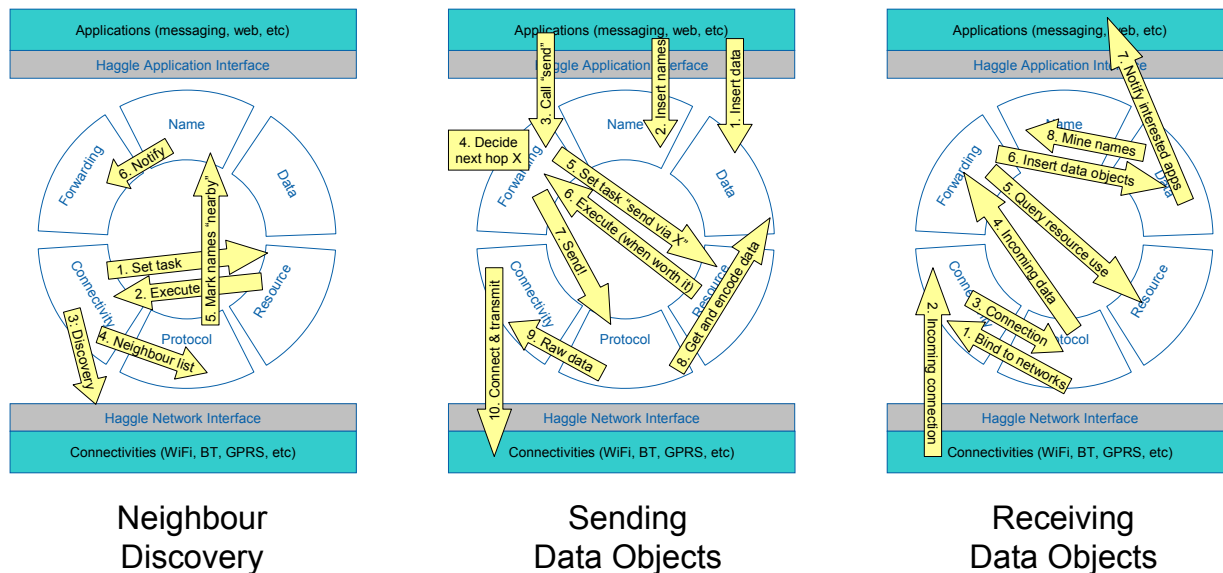
**Forwarding Manager:** allows apps to specify which objects should be sent to whom. Forwarding algorithms calculate benefit of sending objects to “nearby” names

**Connectivity Manager:** initiates neighbour discovery, provides connections to neighbours, and estimates costs (money, energy, time) of transmitting objects

**Protocol Manager:** encapsulates all methods of transferring data objects, e.g. SMTP, POP, and a direct P2P protocol; marks names as “nearby”

**Resource Manager:** calculates how best to use each connectivity at each time point, based on the benefits and costs of possible actions

## Operation of Architecture



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