

Wakeman, Ian; Ellis, David; Owen, Tim; Rathke, Julian; Watson, Des

Risky business: Motivations for markets in programmable networks. (English) [Zbl 1129.68349](#)
Wakamiya, Naoki (ed.) et al., Active networks. IFIP-TC6 5th international working conference, IWAN 2003, Kyoto, Japan, December 10–12, 2003. Proceedings. Berlin: Springer (ISBN 3-540-21250-7/pbk). Lecture Notes in Computer Science 2982, 266-279 (2004).

Summary: We believe that the problems of safety, security and resource usage combine to make it unlikely that programmable networks will ever be viable without mechanisms to transfer risk from the platform provider to the user and the programmer. However, we have well established mechanisms for managing risk – markets. In this paper we argue for the establishment of markets to manage the risk in running a piece of software and to ensure that the risk is reflected on all the stakeholders.

We describe a strawman architecture for third party computation in the programmable network. Within this architecture, we identify two major novel features: dynamic price setting, and a reputation service. We investigate the feasibility of these features and provide evidence that a practical system can indeed be built.

Our contributions are in the argument for markets providing a risk management mechanism for programmable networks, the development of an economic model showing incentives for developing better software, and in the first analysis of a real transaction graph for reputation systems from an Internet commerce site.

For the entire collection see [\[Zbl 1046.68945\]](#).

MSC:

[68M10](#) Network design and communication in computer systems

[91B26](#) Auctions, bargaining, bidding and selling, and other market models

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