

Identifying Redundancies, Knots, Loops and Dispositions to Fraud and Cyberattack within Consumer Business Processes

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Two sources of significant fragility and risk in business processes, particularly such as involve intensive consumer interaction (e.g., retail purchases, banking, customer relations, cross-selling), are activities of planned and sustained fraud and cyberattack. Both may involve agents and activities that originate among customers, or vendors/providers, or outsiders, or some combination from two or more of these categories. Most typically, transgressions that occur are not detected until after the fact and after a significant number of customers, accounts, and stakeholders have been adversely affected. The costs (and often fees and penalties for the responsible business entities) can be significant and long-term in consequences.

A model is presented for both tracking irregular and aberrant activities and also providing early-warning indicators of use to organizations in the task of circumventing illicit activities and minimizing the damages and the explicit costs. This model is based upon research in behavioral studies including the formation and conduct of extremist and terrorist cells, the growth of such amorphous entities as Anonymous, LulzSec, 4chan and less-publicized groups. Within this model, emphasis is placed upon the use of predictive heuristics and a set of statistical methods derived from modifications to well-established PCA (principal component analysis) that have been employed in anomaly detection, tracking and prediction. A key distinction in this approach is the attention given to treating business process flows in financial and other industries as precisely a flow dynamics rather than a static collection or linear sequence of events. In this methodology, emphasis is placed upon identification of transition points and channels within different data flow operations where there can be, intentionally or otherwise, opportunities for the injection of intrusive data manipulation, or minimally, a sufficient loss of efficiency that yields a similar effect in terms of customer and profitability losses.

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