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Analytic codebook for the paper: “Software Development as an Experiment System: A Qualitative Survey on the State of the Practice”

The codebook is generated from ATLAS.ti (<http://www.atlasti.com>).

Code Label	Code Family and Code Description	
BAC BACKGROUND INFORMATION	■	Top category. Descriptive background information about the interviewee / their company / the company's product(s).
BAC: INTERVIEWEE	■	Subcategory. Descriptive background information about the interviewee.
bac: interviewee: length of employment	■	Interviewee's length of employment in the current company.
bac: interviewee: position	■	The interviewee's position in the current company.
BAC: COMPANY	■	Subcategory. Descriptive background information about the interviewee's company.
bac: company: industry sector	■	A description of the industry sector the company operates in.
bac: company: product description	■	A description of the software product(s) the company develops (if several, those the interviewee is involved with).
BAC: DEVELOPMENT METHODOLOGY	■	Subcategory. Descriptions of the software development methodology used in the company.
bac: development: scrum	■	Scrum/a scrum variant is used. Does not imply a textbook application, only that the interviewee mentions the methodology.
bac: development: unspecified agile	■	A specific agile methodology is not named but the agility of the development practices is either explicitly stated or implicitly visible in the interviewee's statements.
bac: development: kanban	■	Kanban is used. Does not imply a textbook application, only that the interviewee mentions the methodology.
bac: development: lean	■	Some type of lean methodology is used / lean principles are followed. Does not imply a textbook application, only that the interviewee mentions the methodology.
BAC: DEVELOPMENT: PRINCIPLES AND PRACTICES	■	Subcategory. Descriptions of the development practices and principles used in the company.

bac: development: principles: continuous deployment	■	Continuous deployment is used. Use the code for descriptions of a system where new versions are automatically deployed to customers after changes are committed to the code repository (and they have passed through a continuous integration system). NB continuous deployment was not explicitly defined to interviewees.
bac: development: principles: continuous integration	■	Continuous integration is used. NB continuous integration was not explicitly defined to interviewees.
bac: development: principles: MVP	■	The lean startup-inspired MVP approach is used. This is an "umbrella approach" which may include several specific experimentation techniques.
BAC: DEVELOPMENT: PRINCIPLES: RELEASE CYCLE LENGTH	■	Subcategory. Descriptions of the length of the release cycle, i.e. the interval of product version releases to customers (not internal releases which may or may not be more frequent). Applies to scheduled upgrades, not unscheduled, urgent bug fixes.
bac: development: principles: release: long	■	Release cycle > 3 months.
bac: development: principles: release: medium	■	Release cycle <= 3 months.
bac: development: principles: release: short	■	Release cycle <= 1 month. Includes continuous deployment.
CHA CHALLENGES	■	Top category. Descriptions of the challenges related to implementing/moving towards continuous experimentation.
CHA: ORGANIZATION	■	Subcategory. Descriptions of the challenges related organizational issues.
cha: organization: culture	■	The organizational culture is not sufficiently conducive to an experimental way of working. Includes a range of issues with respect to roles, responsibilities, and ways of working.
CHA: B2B DOMAIN SPECIFIC	■	Subcategory. Descriptions of the particular challenges of operating in a business-to-business environment.
cha: b2b: access to end users	■	Collecting relevant feedback is difficult as sufficient access to end users does not exist.
cha: b2b: consent to usage data collection	■	Customer consent to collecting product usage data is withheld or uncertain.
cha: b2b: customer organization culture	■	The customer organizations' culture is not sufficiently conducive to an experimental way of working. Includes a range of issues with respect to roles, responsibilities, and ways of working.
CHA: DATA MANAGEMENT	■	Subcategory. Descriptions of the challenges related to data (customer feedback and product usage data) management.
cha: process: data analysis	■	The collected feedback / product data is not analyzed rigorously enough.

cha: process: sharing of data	■	The collected feedback/data (or the resulting analyses) are not easily available to or shared with all relevant stakeholders within the company.
CHA: PRODUCT MANAGEMENT	■	Subcategory. Descriptions of the challenges related to product management.
cha: product: defining product roadmap	■	Challenges in extending or aligning the roadmap of an established product or an MVP/MVF. Includes e.g. challenges in prioritizing requirements, and obstacles in deciding how far to develop a product before exposing it to the market.
cha: product: identifying metrics	■	Challenges in identifying and applying the appropriate metrics to evaluate the customer value or success of a software product or feature (in experiments/general usage).
cha: product: productization	■	Challenges in productizing or commercializing the product/service.
cha: product: release cycle speed	■	The release cycle is not rapid enough.
CHA: RESOURCES	■	Subcategory. Descriptions of the challenges related to a lack of resources.
cha: resources: budget	■	A limited budget restricts experimentation.
cha: resources: domain knowledge	■	Lack of domain knowledge restricts experimentation.
cha: resources: technical	■	Technical obstacles restrict experimentation.
cha: resources: time	■	Lack of time restricts experimentation.
STRENGTHS	■	Top category. Descriptions of the enabling factors of experimentation.
strengths: customer and domain knowledge	■	Close customer relationships and deep customer and domain knowledge facilitate experimentation.
strengths: organizational culture	■	The organizational culture facilitates experimentation. Includes a range of issues with respect to roles, responsibilities, or ways of working.
strengths: release cycle speed	■	A rapid release cycle facilitates experimentation.
strengths: technical competence	■	Technical competence facilitates experimentation.
strengths: technical tools available	■	The availability of technical tools facilitates experimentation.
TEC TECHNIQUES OF CUSTOMER FEEDBACK COLLECTION	■	Top category. Descriptions of the techniques used to collect explicit and implicit customer feedback.
TEC: ANALYSIS - PROBLEM ANALYSIS AND REQUIREMENTS ENGINEERING	■	Subcategory. Customer feedback collection techniques which are used during problem analysis and requirements engineering.
tec: analysis: customer representatives	■	A customer representative (who is in touch with the end user needs) provides feedback.

tec: analysis: internal brainstorming	■	Company's internal brainstorming sessions are used to generate ideas for product development. Applicable only to products where the company's personnel also represents potential customers.
tec: analysis: proofs of concept	■	PoCs are used to collect customer feedback.
tec: analysis: prototyping	■	Prototypes are used to collect customer feedback. Includes conceptual, paper, and programmatic prototypes.
tec: analysis: stakeholder interviews	■	Potential or current customers are interviewed specifically in order to try to understand their needs, opinions, and problems. Includes focus groups. NB do not confuse with general customer meetings.
tec: analysis: use cases	■	Use cases or use scenarios are used to collect customer feedback.
TEC: DEVELOPMENT -DESIGN, CONSTRUCTION AND TESTING	■	Subcategory. Customer feedback collection techniques which are used during product or feature development (design, programming and quality assurance).
tec: development: acceptance testing	■	Acceptance testing performed by customers.
tec: development: alpha/beta testing	■	Alpha or beta testing performed by customers.
tec: development: informal end user tests	■	Informal customer tests are used to collect feedback. For example "get out of the building"- type scenarios, where potential customers are asked about their opinion of a product under development.
tec: development: internal experiments	■	Company's internal experiments are used to generate feedback. Applicable only to products where the company's personnel also represents potential customers.
tec: development: labs website	■	A "labs" website is used to collect customer feedback. The site includes early prototypes/versions of products.
tec: development: pilot customers	■	Pilot customers (users) are used to collect feedback.
tec: development: usability/UX testing	■	Different forms of usability or UX testing/experiments/evaluation methods are used to collect customer feedback. Includes usability testing, UI labs, UI evaluation, UX diary studies etc.
TEC: EVOLUTION AND MAINTENANCE	■	Subcategory. Customer feedback collection techniques which are used after the initial deployment of a product or a feature.
tec: evolution: A/B testing	■	A/B testing is used to collect customer feedback. Includes multivariate testing and segmentation of the customer base for running different versions. NB A/B testing was not explicitly defined to interviewees.
tec: evolution: bug report analysis	■	A helpdesk/support/bug reporting system is used to collect customer feedback.
tec: evolution: feature voting	■	Feature voting (voting for existing features or bug fixes etc.) is used to collect customer feedback. The system may include the option of suggesting new features.

tec: evolution: in-product surveys	■	In-product surveys or polls are used to collect customer feedback.
tec: evolution: usage data analysis	■	Product usage data (including product performance data) collection and analysis is used to obtain implicit customer feedback.
TEC: GENERAL, PHASE-INDEPENDENT	■	Subcategory. Generic customer feedback collection techniques which are used during all phases of product development.
tec: general: customer surveys	■	Customer surveys are used to collect customer feedback. Includes separate end user surveys in a B2B environment.
tec: general: direct customer feedback	■	Direct customer feedback concerning the product is collected. Includes means such as face to face meetings, seminars, demos, email, phone, web-based contact or feedback forms etc.
tec: general: market research	■	Market research/analysis is used to collect customer feedback or information about customer needs.
TEC: PROSPECTIVE TECHNIQUES	■	Subcategory. Customer feedback collection techniques whose implementation is planned or currently under development.
tec: prospective: A/B testing	■	There are plans to use A/B testing to collect customer feedback in the future. Includes plans to improve current practices.
tec: prospective: usage data collection	■	There are plans to collect and analyze product usage data (including product performance data) in the future to obtain implicit customer feedback. Includes plans to improve current practices.
USE OF COLLECTED FEEDBACK	■	Top category. Descriptions of how the collected customer feedback is used in the software product development process.
use: integration into product development	■	Descriptions of how the collected customer feedback is integrated into the product development process. Includes descriptions of how and by whom feedback is analyzed, how it relates to the product roadmap / backlog etc.
use: basis for innovation	■	Descriptions of using the collected customer feedback specifically as a basis for innovation or improvement (not simply for troubleshooting or straightforward requirements elicitation).
use: connection to business strategy	■	Descriptions of the connection between the collected customer feedback and the company strategy or business goals. Includes descriptions of the lack of connection.
USE: PRIORITIZATION OF REQUIREMENTS	■	Subcategory. Descriptions of requirements prioritization practices.
use: prioritization: co-operation	■	Requirements are prioritized in co-operation with the customer(s). Applicable in a business-to-business environment.
use: prioritization: customers	■	Requirements are prioritized by the customer(s). Applicable in a business-to-business environment.

use: prioritization: internally	■	Requirements are prioritized within the software development company.
USE: RELEVANCE OF FEEDBACK	■	Subcategory. Descriptions of the reasoning behind current or planned ways of using customer feedback.
use: relevance: fact-based decision-making	■	Data-driven approach to decision-making in order to minimize decisions based on intuition or individual opinions.
use: relevance: identifying customer value	■	Identifying and focusing on products and features that create customer value.
USE: REQUIREMENTS, SOURCE OF	■	Subcategory. Descriptions of where requirements originate from.
use: requirements: explicit customer requirements	■	Requirements originate from explicitly defined customer requirements.
use: requirements: implicit in customer feedback	■	Requirements originate from the collected customer feedback. However, they are implicit within the feedback (not explicitly predefined by customers).
use: requirements: internal ideas	■	Requirements originate from the software development company's internal ideas. Customer feedback plays a minor role.