Improving Digital Content Production For Smes: A Design Science Approach to Ai-Integrated Workflow Development

Andika Rifki Afandi[1*], Dina Dellyana[2]

[1,2] School of Business and Management, Institut Teknologi Bandung, Jakarta Campus, Indonesia
* Corresponding Author:
Email: 29324104@mahasiswa.itb.ac.id

Abstract.

The study focuses on the redesign of a workflow related to the use of AI to produce content on Instagram to enhance the time-consumption, stability, and reliability of services provided to SME clients in Pallas Creative, a digital marketing agency. Because SMEs are starting to depend on Instagram as a source of awareness creation and a sales driving tool, the agencies are supposed to produce the necessary content in a timely and consistent way, but real-life issues like the incongruity of briefs, rewrites, and ineffective coordination tend to cause delays, rewrites, and inconsistent lead time. Thus, the inquiry that the proposed study is responding to is as follows: what can be done to design and implement an AI empowered content production workflow that would be less inefficient but remain efficient to the content quality and client satisfaction in an agency and SME environment? The qualitative Design science Research approach used in the study is backed by Business process management. Semi structured interviews were used to get the data with internal stakeholders into content operations and SME client representative integrated with observations and internal records. The as is workflow was mapped with the help of BPMN finding bottlenecks and revision loops, and the findings were structured with the help of the thematic analysis and root cause analysis and which were further translations into design requirements and principles in order to create the proposed workflow artifact. The findings include the information that the primary types of inefficiencies must be considered systemic (such as short ambiguity and weaponization of assets), but the approval and revision processes are prolonged and hindered by fragmented feedback, and operational end of a thread due to role dependency and frequent emergency demands. According to them, the suggested AI facilitates workflow introduces, introduces clearer governance about the revision and approval of any work in a single gate approval and structured feedback, centralized tracking and versioning as a single source of solidity, a dual-lane production flow of planned and momentum content flow, and human-in-the-loop AI support with short development and ideating drafting and quality checks. In general, this paper gives a viable workflow map that can assist organizations attending to SMEs to streamline lead time and rework and still maintain consistency and reliability of services.

Keywords: *SMEs;Instagram marketing; content production workflow; Business Process Management; Design Science Research; Technology Organization Environment and generative AI.*

I. INTRODUCTION

The development of Instagram as an algorithmically ranked, visually dominant platform has redefined the manner in which the small and medium enterprises (SMEs) establish their brands and vie in attraction. Since the distribution of content is predetermined by the systems which forecast what is the most relevant content to viewers, timeliness and consistency are now the activities which need be operational to ensure reach and engagement remain sustainable [1]. Simultaneously, SMEs are supposed to provide high frequency, multi format content like Reels, Stories, and carousels fully coherent with brand positioning and preferences of the audience [2].These requirements can usually supersede the internal capabilities and the production capacities of SMEs and hence these organizations can outsource the content execution on Instagram to digital marketing companies [3]. Agency based production is however often associated with the cross role coordination and agency client interdependence, incomplete briefs, missing assets, shifting priorities and momentum content requests resulting in bottlenecks with repeated frequency. Scattered feedback among assorted client stakeholders, lack of clarity of rights in decision making, and ineffective version control often extends the time required to make decisions and provide approval of changes, creating rework and erratic lead times which disrupt publishing timelines and dissipate content quality [4]. As a result, even with the use of productivity tools, performance discrepancies may not disappear due to the reasons lies in the fact that the major constraints are rooted in the governance of end to end processes as opposed to individual ones [5].

The study aims to propose a solution to the problem by the redesign of Pallas Creative Instagram content production workflow, a digital marketing agency based in Jakarta which operates among SME clients. BI is based on Business Process Management (BPM) which serves to model the current workflow as is and identify the delay points by mapping the process with BPMN representations [6]. The qualitative analysis is further used to get the root causes of rework and lead time variation, especially those caused by internal routine and agency client work. Based on these results, the research has embraced Design Science Research (DSR) and Design Science Research Methodology (DSRM) to come up with a viable artifact where the study is represented by a to be workflow [7]. An environment lens that is a Technology Organization Environment (TOE) is also included to assess the viability of implementation based on technological competence, organizational politics, and external stressors like changing the client demand [8]. The resultant artifact incorporates AI in the form of an enabling factor in some controlled, human in the loop substantiation. The suggested be workflow also presents a short readiness gate, single-point approval and structured feedback policies, centralized tracking and version control as one source of truth and a dual lane execution policy to reconcile planned content to in-flight momentum requests. The workflow failure modes, process level diagnosis of workflow failure, and a workflow blueprint to enhance workflow timeliness, consistency, and service reliability are presented in this paper to the working community in the field of Instagram production agencies.

II. METHODS

Detailed in this paper, the validated and tested qualitative single case research design in the Pallas Creative was used to diagnose and redesign an Instagram content production process among SME clients. The methods were chosen to accommodate a process improvement and solution design goal with a combination of Business Process Management (BPM) to offer workflow visibility, qualitative analysis to identify causal explanation and Design Science Research (DSR) to develop artifacts. To provide an opportunity to identify handovers, waiting points and rework loops, the current as is the workflow was modeled in BPMN to include end to end activities, which include brief intake, planning, content creation, internal review, client approval, revisions, scheduling and posting. Second, primary data came in the form of semi structured interviewing five informants composed of two internal jobs at Pallas Creative (Project Manager and Social Media team) and three clients in the SME sector against the backdrop of observation of day to day coordination and analysis of workflow artefacts including brief examples, content planning formats, and approval and revision traces to conduct triangulation.

Third, the interview and document data was transcribed in terms of theme and later synthesized through the root cause analysis to elaborate on common bottlenecks in terms of brief readiness, asset availability, feedback fragmentation, approval governance, tracking and version control and capacity pressure under multi client demand. The discovered causes were finally mapped through the Technology Organization Environment (TOE) lens to evaluate the feasibility of its implementation and the results were archived into a DSR artifact as a to be AI integrated workflow, introducing brief readiness gating, single point approval, a set of feedback and penalization rules, centralized tracking and version control as a single source of truth, and dual lane execution logic to planned and fast turnaround momentum content.

III. RESULT AND DISCUSSION

Production of Instagram content within an agency is a multi actor service, which has to simultaneously address the marketing requirements, including timeliness, relevance, and consistency of messages, and operational requirements, including coordination of roles, client decision making, and readiness of assets. Based on this, the production cycle usually comprises of a short intake phase, clarification, asset gathering, ideation, writing, self-checking, client check, revision, setting of a timetable and posting. This study uses a combination of process mapping through the BPMN framework and thematic analysis of the interview evidence to determine that workflow inefficiency in Pallas Creative is focalized on four areas where they are interacting, which are the quality of the upstream inputs and preliminary

alignment, loops of approval and revision, fragmented tracking and collaboration visibility and the lack of a learned and standardized AI incorporation as a governing process facilitator. Observed bottlenecks in the work in the as is process. The BPMN map emphasizes that the workflow is not linear, rather, in multiple repetitions of processes such as clarification, reviewing with clients, and revisions. The biggest choke point is when the initial draft is handed over to the client caused by work being stagnated in a loop of revision of the review approval.

According to the descriptions of internal stakeholders, the largest source of iteration is the client feedback because, in most cases, the feedback is vaguely conveyed and the PM or Account somehow needs to turn it into instructional actions, customer feedback is often provided in bits instead of steady ones which results into layer upon layer revisions and is hard to close in one iteration. This means that all the scheduling gateways will be approval and the posting of timelines will be very prone to slipping every time approval is deferred. Non operational briefs also cause disruption of the process upstream. Orders are usually conveyed as broad outlines and lack deep specificity as regards to goal, primary message direction, invitation to action, limits, allusions and performance thresholds. It will require repetitive clarification, risk on interpretation on the first instance and directional corrections after the client responds to the initial output thus increasing lead time by reworking. Waiting time is the third bottleneck due to the dependency on other suppliers assets and information like photos, videos, details of the product, its pricing and conditions of the promotion. Incomplete assets or information lead to put production on a hiatus or work on assumptions that later may have to be at minimum fixed, leading to waiting and rework which cannot be completely controlled by the agency but have a potent impact on the perception of service reliability. Lastly, it lacks centralized status tracking and version control which weakens the as is workflow.

The communication and approvals are often fragmented in chat threads and different channels that are very long, thus leading to the risk of missing the latest comments, the final decision, or the most updated version thereof. Such fragmentation compels the teams to waste time rebuilding context and relying of which is complete, which is especially taxing on coordination and poses high risks to miscommunication. Synthesis of root causes and interpretation of TOE.A fishbone structure was used to consolidate root causes, which were divided into People, Method, Technology and Tools, Input and Material, Management and Control, and Environment. According to the synthesis, the deepest roots are to be found under Method, Input, and Technology and Tools. The problems with methods are unclear briefs, excessive looping of approval and rewrites, and the absence of a clear channel of how intended work was planned as opposed to that of urgent needs, leading to the ability of urgent needs to interfere with planned production and expand the backlog. Causes directly involving people are enhanced by cross client context switching, relying heavily on the PM or Account role as the primary point of coordination that can paralysis progress when there are numerous clarifications and interpretation of revision that have to be managed simultaneously. The issues of Technology and Tools are characterized by the absence of a single source of truth making it possible to track, version and log the revisions and approvals.

These weaknesses are exacerbated by environmental pressure since the Instagram production is time sensitive and momentum trends impulse and seasonal moments driven, whereas owner motivated SME decision making can facilitate approval variability and lengthen timelines. Presentation of these results using the Technology Organization Environment framework further explains that it is not the system that fails, its interaction creates inefficiency which is sustained. As applied to the technology aspect, tracking fragmentation and opportunistic, unofficial AI usage are lowering visibility and may even cause more revision in case of inconsistent outputs. On the organizational aspect, the looping behavior is maintained by weak governance surrounding approval, revisions and quality gates. Based on environmental aspect, volatility in client requests and platform timing pressure are very high, and the cost of delays is increased because the effects of workflow breakdown are magnified. The proposed artifact is the improvement package of workflow amid the application of AI.Resting on the identified bottlenecks, a to be workflow artifact is created, consisting of process redesign, service governance, and technology support with AI being a driver in a controlled human in the loop process, but not an improvised one. Front loaded design clarity is the initial design response which promotes the use of standardized short intake and client asset preparedness, with the

help of AI assisted completeness checking and brief condensation, which bring missing details to the fore. Improved and accurate first drafts are the second response, which is based on AI assisted ideation and drafting under the control of client specific prompt library, brand voice, and internal quality control mechanisms to ensure that generic or off track results of the process do not escalate revisions.

The third solution incorporates the AI assisted quality gates that involve structured check list to minimize repetitive minor revisions on the tones, call to action phrasing, formatting, and information completeness prior to external submissions. In order to deal with the primary downstream bottleneck, the artifact suggests single gate approval with systematic feedback policies in such a way that solicitation of revision requests is centralized, decipherable, and restricted to decrease fragmentation and stabilize the lead time. It also suggests unifying source of truth tracking system which captures status, version control and revision and approval logs in order to minimize time taken in terms of context restoration and avoiding version mismatch. Lastly, the artifact proposes a dual lane execution logic which includes a primary lane that contains scheduled calendar based work and a fast lane that contains urgent momentum content with few brief conditions, template ready quick quality checks and time boxed approval when urgent demands do not cause derailments in the planned pipeline. On the whole, the findings suggest that the type of delays that are the most harmful are caused by the upstream brief and asset readiness, downstream approval governance weakness, and fragmented tracking. These roots are explicitly addressed by the proposed artifact through improving the quality of inputs, managing the involvement of iteration, and enhancing the visibility of a workflow, which is likely to minimize the number of rework, stabilize the lead time, maintain the campaign momentum, and consider the perceived service reliability among SME customers.

IV. CONCLUSION

The research findings demonstrate that Instagram content creation to the SME clients in an agency setting is limited mainly due to a lack of design and governance of end-to-end processes, as opposed to a lack of the ability to execute its actions in isolation. The results based on BPMN mapping and subjective insights with internal and client interviews show that incompleteness of briefs and assets preparedness during intake, lengthening approval and revision cycles due to the disjointed feedback and lack of decision rights, and poor visibility because of poor tracking and version control are the causes of inefficiency in Pallas Creative and lead to rework and unreliable lead time that destroys the patterns of posting and service reliability. To solve these underlying causes, the study creates a Design Science Research artifact in the shape of a to be workflow which includes a short readiness gate, single gate approval with structured feedback policies and a centralized tracking and version control as a single source of truth and two lane execution logic to safeguard planned production and still allow quick turnaround momentum content.

In this reengineered process, AI will act as controlled human in the loop enabler to assist short-term clarification, speed up the ideation and drafting, and internalized quality controls, which will minimize unnecessary revisions, stabilize delivery. Through the Technology Organization Environment lens, the research further points out that the success in implementation relies on the conformity of the tools with the organization rules and the instability of the external demand, and the paper both provides a process level diagnosis of failure modes of workflow and an implementable workflow blueprint that the agencies can operationalize to enhance timeliness, consistency, and service quality to SME clients, where future work is also proposed to measure the artifact over time with the operational measures like lead time, revision frequency, on time posting rate, and client satisfaction.

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