A Proposal for the Discovery of System Goals from Business Process Models

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***Abstract*– A framework of generic categories of process activities is adopted as a framework of generic categories of system goals in order to guide the reasoning of system analysts and stakeholders for the discovery of system goals from business process models. The categories of process activities are organized in four essential aspects of the process concept: input, evolution, evaluation and decision and output. These categories are characterized by verbs which offer a semantic diversity that clarifies the field of reasoning and guides the discovery of goals. This article proposes an approach for obtaining system goals from business process models; the proposal is illustrated with a diverse and rich set of pertinent goals discovered for a system supporting a "booking a flight" process.**

***Keywords*-- Business processes; business process models reuse; system goals elicitation.**

I. INTRODUCTION

The requirements elicitation phase is one of the most important stages in the development of an information system. One of the main challenges of the requirements elicitation is to ensure that the system requirements are consistent with the needs of the organization where it will be used [1], [53], [54]. In this context, proposals for goals elicitation have emerged as one of the most promising strategies to tackle this problem [2], [53]. Goals are prescriptive statements of intent whose satisfaction requires the cooperation of agents in the software and its environment. Goals capture the various objectives the system under construction should achieve [3], [4]. In recent years, a lot of effort has been dedicated to goals elicitation as a way of providing the rationale (why) of a future system [5], [53]. According to Rolland [6], the argument of goal-driven approaches is that the rationale for developing a system is to be found outside the system itself, in the enterprise in which the system shall function. The experience is that is difficult for domain experts to deal with the fuzzy concept of a goal. Yet, domain experts need to discover the goals of real systems. It is often assumed that systems are constructed with some goals in mind [7]. However, practical experience [8], [9], shows that goals are not given and therefore the question as to where they originate from acquires importance [8]. Consequently, it is evident that help has to be provided so that goal elicitation can be meaningfully performed.

In order to assist the system analysts in the goals elicitation process, we propose FP2G (From Processes to Goals). FP2G uses business process models of the "As-Is" system and a set of categories of process activities to guide the reflection of the system analysts and stakeholders aiming to discover the required goals of the envisioned system. The system "As-Is" activities, taken from the process models, lead the discovery process, systematically, covering the entire system; meanwhile, the categories of process activities focus the attention on valuable aspects that the future system must accomplish. FP2G offers an alternative road to elicitation strategies based on goals refinement. This paper is organized as follows: Section II presents the related work, Section III describes the proposal, Section IV exemplifies the approach through an application case and Section V considers the conclusions and future work.

II. RELATED WORK

Goal Requirements Engineering (GORE) has been the subject of multiple works in recent years achieve [4], [53]. Some of the most outstanding approaches in this field are: KAOS, i*, NFR framework, GBRAM, CREWS and Tropos. KAOS is a formal approach for analyzing goals and producing requirements based on pre-stated goals; the KAOS approach is mainly oriented towards ensuring that high-level goals identified by stakeholders are transformed into concrete system requirements [10], [55]. i* focuses on modeling of the dependencies that exist between the business actors in order to achieve organizational goals; the framework consists of two models: the strategic dependency model and the strategic rationale model [11], [12], [13], [56]. The NFR framework provides for the representation of non-functional requirements in terms of interrelated goals called softgoals [14], [57]. The Goal Based Requirements Analysis Method (GBRAM) was developed as a response to the lack of goal identification in other GORE methods; GBRAM offers a set of heuristics for goal identification [15]. CREWS proposes to couple goals and scenarios to directly help in the requirements engineering activity; thus, its aim is to elicit requirements through goal-scenario coupling [16]. The Tropos methodology guides the development of agent-based systems from the early goals analysis through architectural design and detailed design to the implementation; Tropos uses the i* modeling framework to represent and reason about requirements and system configuration choices [17], [18], [19], [58].

Approaches aiming the use of goals for the definition and analysis of future systems are proposed by Hsu et al. [20], Kavakli [21], and Urrego [22]. On the line of relating goals and non-functional requirements, we found proposals like [23-27] among others.

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Regarding works using goals and requirements elicitation from business processes, Durán et al. [28] present requirements templates that can improve requirements elicitation and expression, and two kinds of patterns: linguistic patterns and requirements patterns which are generic requirements templates that are found very often during the requirements elicitation process and that can be reused with some adaptation. Shishkov et al. [29] propose the use cases derivation from business process models by means of norm analysis. Martínez [30] provides a methodological approach that enables the generation of conceptual and requirements models from organizational descriptions; this process enables analysts to create a business model that represents the current situation of the enterprise. The author argues that this model is a correct source to determine the expected functionality of the system To-Be. Sommerville et al. [31] propose an understanding of how socio-technical system is structured in terms of responsibilities as an effective way of discovering this type of requirements; the author introduces the idea of responsibility modeling and show, using an example drawn from the domain of emergency planning, how a responsibility model can be used to derive information requirements. Pastor and de la Vara [32] describe an approach based on business process modeling and purpose analysis through BPMN and the goal/strategy Map approach. The business environment is modeled in the form of business process diagrams. The diagrams are validated by end-users and the purpose of the system is then analyzed in order to agree on the effect that the information system should have on the business processes. Finally, requirements are specified by means of the description of the business process tasks to be supported by the system. Souza et al. [33] report a study in which business process modeling was regarded as a useful tool for requirements engineering. The author has used business process models as a starting point to derive alternative sets of requirements for a process-oriented system. The approach is demonstrated in a case study. Franch et al. [34] present PABRE, a method for conducting the requirements elicitation activity. PABRE is built upon a Requirements Patterns Catalog and its context of application is Off-The-Shelf selection projects driven-by call-for-tender processes. The PABRE process selects patterns from the catalog that apply to the particular selection project and converts them into the real requirements that finally configure the project Requirements Document. Bittencourt and Mendes [35] propose an approach to softgoals identification based on business models. Jaramillo [36] presents a proposal for softgoals elicitation from business process models existing in organizations. The main contribution of the approach is to assist the requirements engineer in the systematic softgoals elicitation process using heuristics and templates, designed for this purpose, and organizational knowledge existing in the form of business process models. de la Vara [37] introduces a methodological approach for business process-based requirements specification and object-oriented conceptual modeling of information systems. The approach consists of four stages: organizational modeling, purpose analysis, specification of system requirements and derivation of object-oriented diagrams.

A recent Literature Review concerning these research issues is presented in [58]. Despite the diversity of approaches proposed for goals elicitation, research in this field remains as a priority and works to improve this process are required.

III. DISCOVERING SYSTEM GOALS FROM BUSINESS PROCESS MODELS

FP2G (From Processes To Goals) is a proposal to assist the system analyst in the discovery of goals of a "To-Be" system from business process models of the "As-Is" system. FP2G claims that these models are a useful starting point for the discovery of goals of a future system and offers an alternative approach especially to proposals based on goals refinement strategies.

To receive assistance in the goals elicitation process, the system analyst must enter the models of the "As-Is" system represented as ASMs (Abstract Service Models) [36] (other types of models based on notations like UML [59] or BPMN [60] could also be used through profiles; nevertheless, this is out of the reach of this article). Taking the ASMs as input, FP2G poses questions that lead the discovery of the "To-Be" system goals. Fig. 1 presents the proposal components.

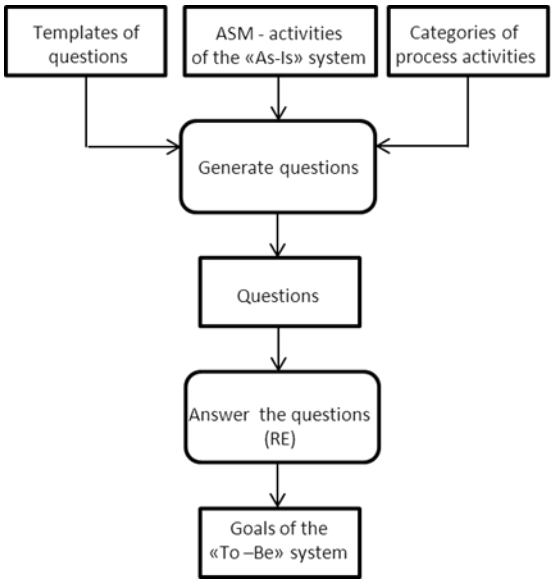

Fig. 1 FP2G components.

The next paragraphs describe each of these elements.

A. *Templates of questions*

Based on the research work realized at the ITOS Group (Colombia) and the Centre de Recherche en Informatique - CRI (France), we propose that the system analyst, in

cooperation with stakeholders, answers a set of questions of the form:

Given that the future system should [CATEGORIES OF PROCESS ACTIVITIES] to perform [ASM PROCESS ACTIVITIES]. In this context, what goals the future system must achieve?"

In this question the elements [CATEGORIES OF PROCESS ACTIVITIES] and [ASM PROCESS ACTIVITIES] play a central role; therefore, they will be described in the next sections.

B. ASM activities

An ASM is a directed graph with nodes that represent system agents and edges correspond to the flows. ASM puts in evidence the interactions between the system agents when achieving their objectives, which facilitates the requirements elicitation process [36]. Fig. 2 illustrates the ASM elements.

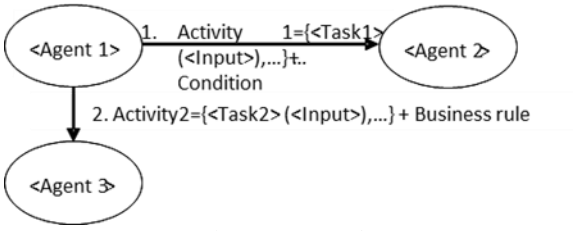

Fig. 2 E.g. ASM elements.

An ASM is a synthetic expression of a business process that contains the information necessary for the application of the proposed approach. That is, we do not need detailed models to execute the goals elicitation process which is a remarkable characteristic of the proposal.

FP2G uses the ASM activities to guide the goals elicitation process as is presented in further sections.

C. Categories of process activities

There are diverse classifications of process activities built with multiple purposes. For example, Storey [38] developed an ontology for the semantic classification of relationships-type constructs in data models based on dictionaries and business taxonomies. Cardoso and Sheth [39], Pahl and Casey [40] and Chun et al. [41] propose the use of ontologies of services for the discovery and composition of Web services. Other approaches emphasize the use of categories of process activities to the re-use of processes in business process modeling tasks [42], [43], [44]. Closer to our aim, we found the lines of work of Mendling et al. [45] and Metzler and Shea [46]. We base our categories of process activities in their approaches as is explained in the subsequent paragraphs.

Mendling et al., discuss the use of text and icons for labeling the graphical constructs in a process model. They apply the MIT Process Handbook [47] and the Levin classes [48] in the classification of verbs used in the activity labels of the SAP Reference Model [49]. Being the SAP solution a market leading tool in the Enterprise system market, the examination of SAP process models gives a good understanding of the use of process models in the real-life business contexts. As a result of this work, a set of twenty-five generic verbs for describing activities in business process models is synthesized; these verbs are presented in Table I.

TABLE I
VERBS DENOTING PROCESS ACTIVITIES.

Appear	Comple-te	Engender	Move	Remove
Assess	Create	Lodge	Percei-ve	Search
Care	Decide	Manage	Preser-ve	Send
Combine	Destroy	Measure	Promi-se	Separat e
Commu-nicate	Display	Modify	Put	Trans-form

Metzler and Shea, propose a taxonomy of cognitive functions that support formal functional modeling of Cognitive Technical Systems (CTSs) and cognitive products. This taxonomy is based on literature research and consists of a set of cognitive capabilities on three hierarchical levels which present hypernym relations. Considering the more specific instances we obtained the next set of verbs; Table II.

TABLE II
COGNITIVE FUNCTIONS

Acquire	Deduce	Communicate
Interpret	Find	Move
Solve	Schedule	Decide
Perceive	Judge	
Calculate	Create	

With the aim to achieve a richer set of verbs, based on Mendling et al.'s proposal, we extend the work of Metzler and Shea. To this end, using Wordnet [50], we have analyzed the Mendling et al.'s verbs in relation to the Metzler and Shea's verbs, obtaining the results condensed in Table III.

TABLE III
EXISTING CORRESPONDENCE BETWEEN MENDLING ET AL.´S VERBS AND METZLER AND SHEA´S VERBS

Mendling et al.'s verbs	**Metzler and Shea's verbs**
Appear	Perceive
Assess	Judge
Communicate	Communicate
Create	Create
Decide	Decide
Engender	Create
Measure	Calculate
Perceive	Perceive

Put	Move
Remove	Move
Search	Find

In consequence, the verbs resulting to extend the Metzler and Shea's proposal are: to preserve, to destroy, to modify, to promise (assure), to manage, to transform, to send and to display. Note that the verbs: to care, to lodge, to combine, to separate and to complete are not included; following are the reasons:

To care: this verb is not enough specific. We estimate that, in most cases, other more specific verbs could replace it.

To lodge: we consider that, in our work, it could be replaced by "to preserve".

To combine, to separate, to complete: we believe that, in our work, they could be replaced by "to transform".

We have grouped these results under the four essential aspects of the process concept: input, evolution, evaluation and decision, and output. The elements of each category are enunciated by verbs in infinitive and generic objects of the domain. In accordance with [51], five types of objects are considered: materials, energy, signals, data, and information. The description of the resulting categories of process activities appears in Table IV.

TABLE IV
CATEGORIES OF PROCESS ACTIVITIES

Categories of "Input"	*To acquire* materials, energy, signals, data or information required to perform the domain services.
	To perceive materials, energy, signals, data or information necessary to perform the domain services.
Categories of "Evolution"	*To interpret* materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To solve materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To calculate materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To find materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To schedule materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To create materials, signals, data or information involved in the development of partial or final products of domain services.
	To move materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To preserve materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To destroy materials, signals, data or information involved in the development of partial or final products of domain services.
	To modify materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To assure materials, energy, signals, data or information required in the development of partial or final products of domain services.
	To manage materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To transform materials, energy, signals, data or information into partial or final products of domain services.
Categories of "Evaluation and Decision"	*To decide* materials, energy, signals, data or information involved in the development of partial or final products.
	To assess materials, energy, signals, data or information involved in the development of partial or final products of domain services.
	To deduce materials, energy, signals, data or information involved in the development of partial or final products of domain services.
Categories of "Output"	*To communicate* materials, energy, signals, data or information obtained in the development of partial or final products of domain services.
	To send materials, energy, signals, data or information obtained in the development of partial or final products of domain services.
	To display materials, energy, signals, data or information obtained in the development of partial or final products of domain services.

Thus, system goals are referred to categories of activities valuables in the domain, and questions to generate system

goals may be centered in these categories. The next section exemplifies the proposal by means of an application case.

IV. DISCOVERY OF SYSTEM GOALS IN AN APPLICATION CASE

To illustrate how the elicitation process is carried out, we will use the proposed approach to elicit the goals of a system. The application case involves the goals elicitation of a "Booking a Flight" system [52]. This process is shown in Fig. 4; from this ASM the "To-Be" system goals will be elicited.

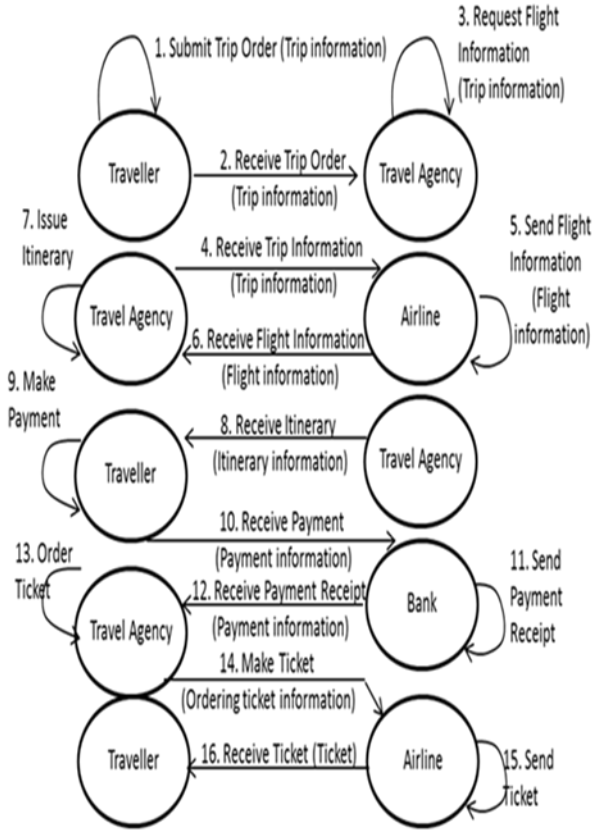

Fig. 3 ASM of the "Booking a flight" process.

For sake of conciseness, the questions will be solved only for the "Submit Trip Order" activity. Given the nature of the "Booking a flight" process, we will use only domain objects of the type "data" and "information". Incorporating, for example, the first element of the categories of process activities "To acquire data or information required to perform the domain services", the stakeholders and system analysts can discover the following goals:

Question: Given that the future system should acquire data or information to perform "Submit trip order". In this context, what goals the future system must achieve?"

Answer (goals).

The future system must:

- Show the options to submit a trip order and to offer the guide for efficient and satisfactory order submission.
- Allow enter, modify, recover, and reuse trip information: origin, destination, dates, passenger´s id., etc.
- Offer technical and commercial information about the services and the platform.
- Offer to visitors and submitters accounts and other important information, such as weather, airports, etc.
- Accept dialogue in real time or deferred, with customers in order to answer questions, and resolve problems.
- Acquire information about international flights databases to offer the best options to customers.
- Acquire unambiguous and complete information about flights and customer´s preferences to obtain the best execution of the "submit trip order" service.

With these answers, the stakeholders and system analysts confirm their acceptance of using the first element of the categories of process activities. Reasoning in this manner, goals for all categories of process activities are obtained; they are expressed in Tables V, VI, VII, and VIII.

TABLE V
"SUBMIT TRIP ORDER": INPUT GOALS.

Question: Given that the future system should *perceive* data or information required to perform "*submit trip order"*. In this context, what goals the future system must achieve?

Answer (goals).

The future system must:

- Incorporate capacities for monitoring the databases, networks and communication systems to identify events which affect the *"submit trip order"* service.
- Perceive events like birthdays, promotions, weather changes, flight information changes, limits for redeeming grants, expiration dates, upgrading dates for customer´s cards, etc.
- Identify the omission of essential information in trip orders.
- Identify and accept messages, remote calls or data from travel agencies, airlines or customers.

TABLE VI
"SUBMIT TRIP ORDER": EVOLUTION GOALS.

Question: Given that the future system should *interpret* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?

Answer (goals).

The future system must:

- Translate data or information of the service to the language selected by the customer.

Question: Given that the future system should *solve* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?

Answer (goals).

The future system must:

- The service must determine the best flight options

according to customer´s restrictions and preferences.
- Present solutions to the customer´s questions and problems.
- Offer options to solve conflicts with flights, dates or other parameters.

Question: Given that the future system should *calculate* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Calculate the trip cost according to the customer´s preferences.
- Calculate the optimal flights for a route on a trip.
- Simulate flights configurations before making the reservation.
- Calculate discounts according to the preferences selected by the customer.

Question: Given that the future system should *find* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Find flight alternatives according to the customer´s preferences.
- Find flights information: origins, destinations, dates, costs, etc.
- Find discounts and promotions.
- Find and markup repeated trip orders.
- Find the data, related to *"submit trip order",* required by the customers.
- Find complementary services information: hotels, cars, assurances, etc.
- Find options to customize the *"submit trip order*" service.
- Find online help and answers to the customer´s questions.

Question: Given that the future system should *schedule* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Schedule the customer´s trip itinerary.
- Schedule the customer´s complementary services: hotels, cars, assurances, etc.

Question: Given that the future system should *create* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Create the customer´s trip itinerary.
- Create the customer´s trip order and reservation.
- Create itinerary simulations.

Question: Given that the future system should *move* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Move flights, dates, and preferences when executing the *"submit trip order"* service.

Question: Given that the future system should *preserve* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Save trip orders.
- Save the customer´s reservation.
- Save the customer´s preferences.
- Save the customers complains.
- Save the transactions log.
- Save the payment record.

Question: Given that the future system should *destroy* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Destroy temporal data and useless information related to the *"submit trip order"* service.

Question: Given that the future system should *modify* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Actualize automatically and periodically the customer´s fidelity and class cards.
- Modify information like customer´s data, flights, trip orders, itineraries, reservations, promotions, languages of the service, services information, etc.

Question: Given that the future system should *assure* data or information involved in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?
Answer (goals).
The future system must:
- Assure the suitable execution of the "*submit trip order"* service.
- Assure the correctness and completeness of the submissions after a pause, the end of a task, interruptions, and fails.
- Assure the integrity and confidentiality of data related to the "*submit trip order"* service.

- Assure the capacity to submit multiple trip orders at the same time.
- Assure the access to the service through a variety of means like internet and mobile systems.
- Assure the availability and the high-level performance of the service.
- Assure the interoperability of the service and the flexibility of applications supporting the communication and the information access.
- Assure the usability of the "*submit trip order"* service from multiple devices anywhere, anytime.
- Assure the security and performance of the "*submit trip order"* service.
- Assure the efficiency of the "*submit trip order"* service.
- Assure the reliability of the "*submit trip order"* service.
- Assure the maintainability of the "*submit trip order"* service.
- Assure the portability of the "*submit trip order"* service.

Question: Given that the future system should *manage* data or information involved in the development of partial or final products to perform "*submit trip order".* In this context, what goals the future system must achieve?
Answer (goals).
The future system must:

- Manage multi-concepts requests: combining price, destinations, classes of tickets, airlines, dates, etc.
- Manage to submit, simultaneously to flight orders, orders for other complementary services: hotels, car rentals, assurance services, golf places, ecological hikes, skydiving, etc.
- Manage the records of submitted trip orders, assuring the traceability and statistical treatment of the information.
- Manage the customer´s queries to their historical information of submissions.
- Manage criteria and metrics of usability and performance for the service.
- Manage online payments to confirm the reservations.

Question: Given that the future system should *transform* data or information involved in the development of partial or final products to perform "*submit trip order".* In this context, what goals the future system must achieve?
Answer (goals).
The future system must:

- Transform the customer´s preferences into flight and services reservations producing economic benefits to the travel agency.
- Transform the customer´s expectations into requirements for the "*submit trip order"* service.

TABLE VII
"SUBMIT TRIP ORDER": EVALUATION AND DECISION GOALS

Question: Given that the future system should *decide* data or information involved in the development of partial or final products to perform "*submit trip order".* In this context, what goals the future system must achieve?
Answer (goals).
The future system must:

- Decide whether the customer is allowed or not to execute the "*submit trip order"* service.
- Offer alternatives to different types of flight tickets e.g. economic, premium, etc.
- Give the possibility to the customer to confirm or cancel the reservation at any time.
- Classify trip orders by customer, date, origin, and destination.

Question: Given that the future system should assess data or information involved in the development of partial or final products to perform "*submit trip order".* In this context, what goals the future system must achieve?
Answer (goals).
The future system must:

- Assess flights availability on a specific date.
- Asses the availability of seats of a specific flight.
- Implement diagnosis functionalities for fail prevention, maintenance programming, technological updates, upgrading capacities, reposition and substitution of hardware and software.
- Evaluate the validity and consistency of the round-trip flights information.
- Assess the completeness and integrity of the trip order information.
- Evaluate the hardware and software of the devices involved in the execution of the "*submit trip order"* service.
- Evaluate demand growth, service capacity, performance and diagnosing errors when executing the "*submit trip order"* service.

Question: Given that the future system should *deduce* data or information involved in the development of partial or final products to perform "*submit trip order".* In this context, what goals the future system must achieve?
Answer (goals).
The future system must:

- Deduce the customer´s profile in accordance with the registered data.
- Deduce the customer´s preferences.
- Deduce the best flights and services for the customer.
- Deduce the critical variables of the service according to its behavior.

TABLE VIII
"SUBMIT TRIP ORDER" OUTPUT GOALS

Question: Given that the future system should *communicate* data or information obtained in the development of partial or final products to perform "*submit trip order".* In this context, what goals the future system must achieve?
Answer (goals).

The future system must:

- Inform the omission of essential information in trip orders and demand its inclusion.
- Confirm the successful submission to the customer.
- Communicate the trip order availability to continue executing other activities or processes.
- Communicate, at the right moment, the state of the transactions.

Question: Given that the future system should *send* data or information obtained in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?

Answer (goals).

The future system must:

- Send the trip order from the customer´s devices to the travel agency and vice versa.
- Send the trip order to the next activity in the process of booking a flight.
- Send, automatically, awards and promotions to the customers.
- Send alert messages to the customers when changes in holidays, seasons, weather, prices, etc.

Question: Given that the future system should *display* data or information obtained in the development of partial or final products to perform "*submit trip order"*. In this context, what goals the future system must achieve?

Answer (goals).

- Show the submitted trip order information to the customer.
- Display messages of alert, error or successful when required.
- Display precise and complete information to guide the customer in the successful execution of the "*submit trip order"* service.

V. CONCLUSIONS AND FUTURE WORK

We have presented, FP2G (From Processes to Goals), a proposal to assist system analysts in the goals elicitation process of a future system. To this aim, FP2G uses business process models of the "As-Is" system and a proposed set of categories of process activities which are classified according to the process concept. These resources guide the goals discovery process: the system "As-Is" activities, taken from the process models, lead the discovery process systematically covering the entire system; meanwhile, the categories of process activities focus the analyst and stakeholders´ attention on valuable aspects that the future system must accomplish. Thus, the main contribution of the proposed approach consists precisely in the systematic assistance to system analysts in the goals elicitation process.

The efficacy of the approach was illustrated in an application case related to a travel agency process. Although only a little activity "submit trip order" was considered in this article, the previous example shows an important set of pertinent goals of the system under construction. The results were compared with existing "Booking a flight" systems and we found that the proposal outcomes not only include but also exceeds their goals. The quantity and pertinence of the goals obtained in all processes involved in "Booking a flight" operations satisfy the exigencies for constructing the system and let confirm the efficacy of FP2G in the discovery of system goals from business processes.

A comparison of FP2G results with results of other remarkable approaches is an experiment in course. With the aim to validate the proposal in industrial environments, we are currently developing a tool to implement the proposed approach.

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