CROWDSOURCING FOR THE DEVELOPMENT OF A HIERARCHICAL ONTOLOGY IN MODERN GREEK FOR CREATIVE ADVERTISING

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Outline of the Presentation

Creative Advertising

Our Objective

Challenges

The Architecture of PromONTotion

- Ontological Backbone
- The 'House of Ads' Game
- Data Mining
- Creativity Support Tool

Facts about PromONTotion

Creative Advertising

- Creative advertising describes the process of capturing a novel idea/concept for an ad campaign and designing its implementation.

- It is governed nowadays by significant budget allocations and large investments.

- A number of creativity support tools have been proposed, to help ad designers come up with novel ideas for setting up a new campaign.

  - Such tools, that could enhance the development of creative ideas, are highly beneficial for the advertising industry.

    - Most of the aforementioned creativity support tools make use of

      - static non-expandable databases

      - term-relation dictionaries

      - hand-crafted associations and transformations

  - Static, passive, expert-dependent knowledge models can hurt creativity (Opas, 2008)

Our Objective

- The present work describes the architecture and design challenges of PromONTotion, a creative advertising support tool that incorporates
  - collaboratively accumulated ad video annotations that pertain to
    - the content of the ad: the product type, the characters, the plot, the artistic features
    - the impact an ad video has on consumers (i.e. annotators)
  - associations between these annotations derived though reasoning within the ontological structure they form
  - knowledge concerning ad type, ad content, ad impact and the relations between them; the knowledge is extracted with mining techniques
- The language of the ontology is Modern Greek
  - Indo-european, the only survivor of the Hellenic language family
  - less widely spoken (~12 M native speakers)
  - weakly/fragmentarily equipped with tools and resources

Characteristics

- PromONTotion relies on no predefined or hand-crafted elements and associations
  - apart from an empty ontological backbone structure, that will include ad content concepts, consumer impact data slots, and taxonomic relations between them.
- The populating of the backbone, as well as the remaining knowledge available by the tool, are data-driven and automatically derived, making PromONTotion
  - generic, dynamic, scalable, expandable, robust and therefore minimally restricting in the creative process and imposing minimal limitations to ideation or brainstorming

The Current Work

- The current work aims at
  - describing the advertisement ontology backbone structure
  - presenting 'House of Ads', the multi-player video game used as the annotation tool for collecting the ad video terms that will populate the ontology.

Ontological Backbone

Level 0	Level 1 Concepts	Level 2 Sub-concepts	Level 3 Sub-concepts	Level 4 Sub-concepts	Level 5 Sub-concepts	Concept Terms/Values
Root	Cinematography	Sound	Music/Song Recognisability			Yes/No/NA
			Song/Music Type			rock/classical/ethnic/jazz/soundtrack/dance/pop/NA/other
		Filming	Photography			picturesque/landscape/ airphoto/other/NA
			Style			realistic/cartoon/fairy tale/animated/fiction/other
	Location	indoors				home/office/work/store/other/NA
		outdoors				urban/rural/space/other/NA
	Ad Impact	Convincing power				very convincing/a little convincing/not convincing
		Opinion				positive/negative/neutral/NA
		Improvement suggestions				content/style/characters/location/music/photography/story/other/NA
	Production	Producer				producer name
		Director				director name
		Production value				amateur-like/professional/high-budget/other/NA
	Participating elements	Main character	Recognisability			famous/movie character/unknown/other/NA
			Type	Human	Gender	male/female/other/NA
					Age	baby/child/teenager/Youth/Middle-aged/Senior/Other/NA
					Occupation	employee/housework/farmer/scientist/public servant/other/NA
				Animal		pet/wild/exotic/small/big/other
				Inanimate		animated/cartoon/inanimate/other/NA
		Key-participants				tool/furniture/vehicle/appliance/gadget/other/NA
	Message Communication	Structure				single stand-alone episode/multiple stand-alone episodes/sequel/other
		Indirect critique on competition				yes/no
		Linguistic schemata				word game/metaphor/paraphrase/figure of speech/other/NA
		Humoristic elements				humoristic word/humoristic phrase/humoristic scenario/other/NA
		tag lines				line from movie/from song/proverb/historical saying/other/NA
		brand name				company brand name/region brand name/other/NA
	Product Type	Novelty				known/new/original/other/NA
		Product	Product	Food		bio/dietary/health poduct/other/NA
				Beverage		alcoholic/non-alcoholic/soft drink/juice/other/NA
				Electrical device	Device type	home appliance/electrical tool/widget/other/NA
					Energy class	A/B/C/D/E/other/NA
				Electronic device		phone/computer/laptop/tablet/GPS/camera/i-pod/i-pad
				Store		clothes/grocery/cosmetics/houseware/electronics/electrical/bookstore/e-shop/other/NA
				vehicle	Type	family/SUV/sports/motorcycle/small/other/NA
					Value	luxury/expensive/affordable /other/NA
				household		kitchenware/detergent/cosmetics/furniture/decorative/bathroom/linen/other/NA
			Service	telecommunication		mobile/internet/double play/triple play/other/NA
				TV		
				Banking		loan/investment/insurance/other
				Insurance		life/investment/other/NA
				Healthcare		yes/no
			Product and Service			yes/no
			Other			yes/no
		Target group				youth/housewifes/professionals/seniors/hobby/entertainment/men/women/parents/children/teenagers/other/NA
		Product Origin				mentioned/implied/not mentioned/other/NA

House of Ads

- Crowdsourcing will be employed for the collection of collaborative ad content tags.
  - Following the Games with a Purpose approach (von Ahn, 2006), a multiplayer browser-based action game, 'House of Ads', is implemented for this particular purpose focusing on challenging and entertaining game play
  - fun elements of interaction and competition (Prensky, 2001) are ensured by including typical action-game challenges rather than simply adopting a quiz-like gameplay
  - It supports 1-4 players
  - It includes two game play modes
    - the combat mode
    - the quiz mode

The 'House of Ads' Game: combat mode

□ two gameplay modes: the combat mode and the quiz mode

- ☐ ontology concepts and sub concepts are mapped as rooms and each ontology term as a collectable game object within the room representing the respective concept
- ☐ The atmosphere is retro-like, resembling the arcade-like games of the 80s and 90s.
- ☐ In a TV screen the ad video is reproduced (selected from ad videos on *youtube*), and the players, simulated as characters navigating within the house, aim at collecting as many objects that characterize the content of the ad as quickly as possible and exit the house.

Players are free to collect another object from the same category if they believe that an object collected by others incorrectly describes the content with respect to this concept. Therefore, contradictive answers and possible cheaters can be easily spotted

The 'House of Ads' Game quiz mode

- The quiz mode is dedicated to resolving annotation questions that could not be resolved in the combat mode, e.g. contradictive answers.
- The questions and their possible answers are posed to all the players simultaneously, and the player who first selects the correct answer receives the money that was blocked so far
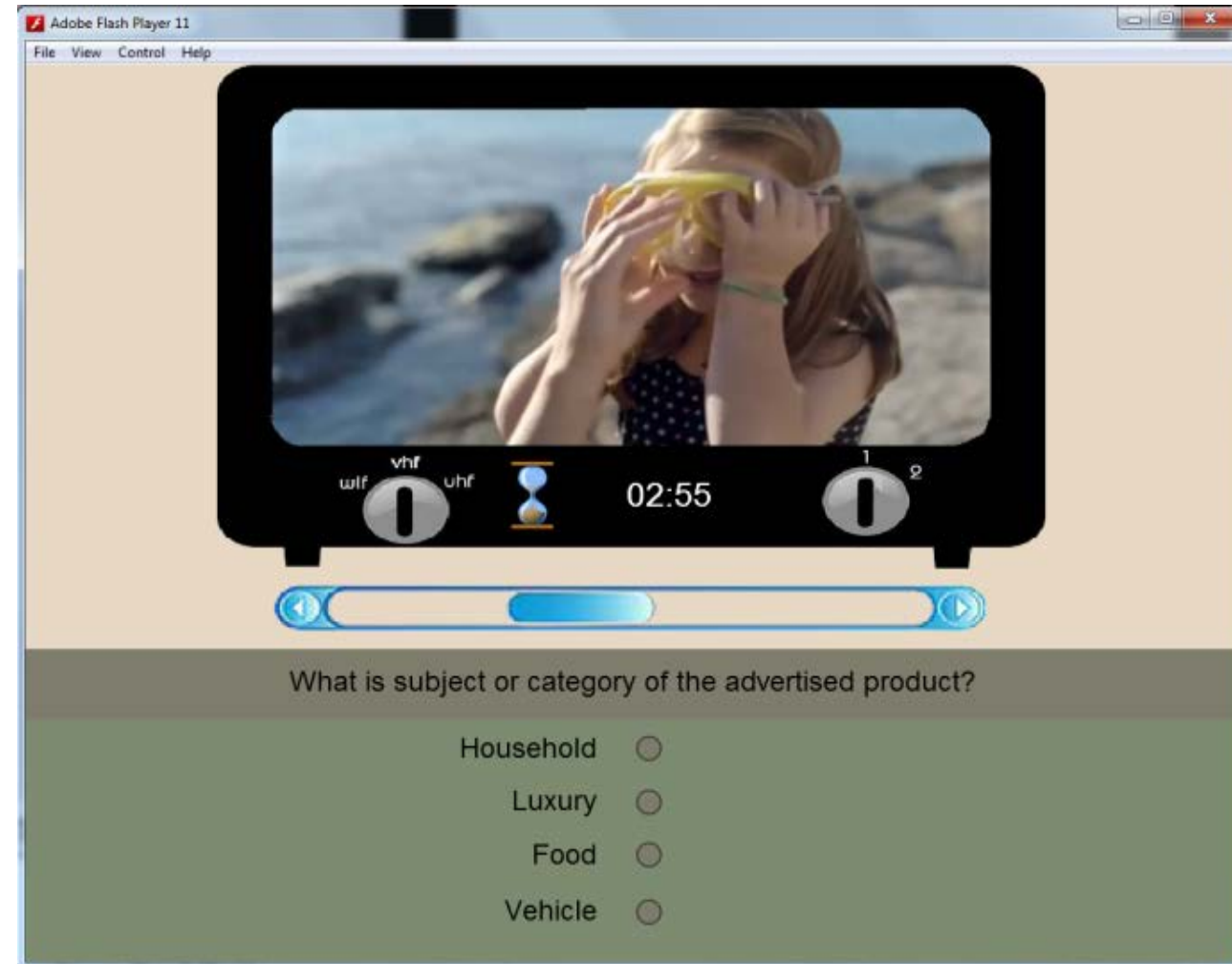
Data Mining

- All player annotations are used to populate the ontology backbone and are stored in a database for further processing
  - The goal of the data processing phase is the detection of co occurrence and correlation information between categories, terms and relations (e.g. in how many ads for cleaning products there is a housewife in the leading role etc.), and its statistical significance, as well as higher-level association information governing them.
- The concepts and attributes described earlier will enable the transformation of the annotation set of a given advertisement into a learning feature-value vector.
- Learning will reveal correlations between ad content choices, ad products and attempt prediction of consumer impact.
- The extracted, mined, knowledge is expected to reveal very interesting and previously unknown information regarding the parameters that directly or indirectly affect ad design and play a role on the consumers' sentiment and how the latter may be influenced.

Creativity Support Tool

☐ Advertisers will be able to see the content of old ads for related products, and thereby come up with new ideas, gain insight regarding the impact of previous campaigns from the players' evaluation, look for screenshots of videos using intelligent search, based not only on keywords, but on concepts. Advertisers will be able:

- ☐ to have access to a rich library of video ads
- ☐ to search the videos by content, based on a query of keywords (e.g. a specific type of product)
- ☐ to retrieve statistical data regarding the ads, i.e. see the terms/concepts/attributes his search keyword co-occurs with most frequently
- ☐ have access to the consumers' evaluation on the advertisements' impact

Facts about PromONTotion

- This Project is funded by the National Strategic Reference Framework (NSRF) 2007-2013: ARCHIMEDES III – Enhancement of research groups in the Technological Education Institutes. The authors are thankful for all this support.

- The Ontology has been finalized

- The pilot cases and game scenarios are also defined

- Demo version of the game will be deployed over the next 2 months

- Data will start to be collected by Dec 2013

- Analysis will begin after 2-3 months of game playing

THANK YOU!

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