TRACK 11

COMMUNICATION IN A DIGITAL WORLD: EVOLUTION OR DISRUPTION?

Valutare e migliorare la comunicazione digitale per la sostenibilità: un modello operativo per i siti web
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Global strategic managerial communication in the digital economy
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Valutare e migliorare la comunicazione digitale per la sostenibilità: un modello operativo per i siti web

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Abstract

Obiettivi. *Il paper mira a valutare e migliorare i requisiti della comunicazione per la sostenibilità nei corporate website attraverso un modello operativo costruito ad hoc.*

Metodologia. *La costruzione del modello avviene sulla base delle indicazioni derivanti sia dalla rassegna della letteratura in tema di corporate sustainability e digital communication, sia dall'analisi dei website delle organizzazioni classificate dal Reputation Institute nel "Global CSR RepTrak 2015". Per sperimentare l'applicabilità del modello, si procede poi ad uno studio pilota tramite la valutazione dei website di organizzazioni appartenenti ai settori bancario e farmaceutico.*

Risultati. *Il modello è costruito sulla base di un'architettura di fattori distinti a più livelli: macro-item, item e micro-item. Esso consente di misurare e valutare i requisiti di comunicazione per la sostenibilità nei website, con attribuzione di score alle singole imprese ed elaborazione di ranking di settore. Il meccanismo di attribuzione dei punteggi nel modello prevede eventuali penalizzazioni per il greenwashing. Il modello permette, inoltre, di individuare aree di criticità che necessitano di interventi correttivi.*

Limiti della ricerca. *Il modello non ha la pretesa di essere esaustivo, in quanto si focalizza su un numero limitato di fattori. La semplificazione derivante dall'impiego di variabili dicotomiche se da un lato può apparire un punto di debolezza, dall'altro garantisce la riduzione della soggettività e dell'ambiguità in sede di rilevazione dei fattori nei siti web.*

Implicazioni pratiche. *Lo studio offre ai responsabili e ai consulenti della comunicazione digitale uno strumento operativo da cui ricavare utili indicazioni per valutare e migliorare la comunicazione per la sostenibilità nei website delle organizzazioni profit e non profit.*

Originalità del lavoro. *Il modello operativo rappresenta la prima proposta di uno strumento di valutazione e miglioramento dei requisiti di comunicazione per la sostenibilità per i siti web.*

Parole chiave: *corporate sustainability; corporate website; digital communication; greenwashing*

Objectives. *The paper aims to assess and improve the requirements of communication for sustainability in the corporate website through an operational model.*

Methodology. *The model has been developed on the basis of indications deriving from the literature review both in the field of corporate sustainability and digital communication, and from the analysis of the website of the organizations classified by the Reputation Institute in the "Global CSR RepTrak 2015". To test the feasibility of the model, a pilot study was carried out by evaluating the website of the organizations belonging to the banking and pharmaceutical industries.*

Findings. *The model is based on an architecture of factors: macro-item, item and micro-item. It enables to measure and assess the requirements of the communication for sustainability in the website, providing a score to the individual companies and industry-ranking. The allocation of the scores in the model includes potential penalties if greenwashing is detected. The model also allows to identify critical areas that need corrective actions.*

Research limits. *The model does not pretend to be exhaustive as it focuses on a limited number of factors. The simplification deriving from the use of dichotomous variables if it can appear a weakness on the one hand, it ensures the reduction of subjectivity and the ambiguity in the detection of the factors on the website, on the other hand.*

Practical implications. *The study provides managers and consultants of digital communication with an operational tool by which to obtain useful information to assess and improve communication for sustainability in the official website of profit and non profit organizations.*

Originality of the study. *The model is the first proposal of a tool which analyzes, assesses and improves the online communication for sustainability of websites.*

Key words: *corporate sustainability; digital communication; website, greenwashing*

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1. Introduzione

Nell'arco degli ultimi decenni, gli ambienti digitali e la rete internet hanno assunto un ruolo di fondamentale importanza nella comunicazione per la sostenibilità da parte di organizzazioni appartenenti a diversi settori merceologici (Basil e Erlandson, 2008). L'esigenza di un'adeguata comunicazione ai propri stakeholder in materia di sostenibilità sta determinando profondi cambiamenti negli strumenti digitali utilizzati dalle imprese. Non a caso, sempre più spesso, i website presentano ampie sezioni dedicate alle tematiche di sostenibilità (Dade e Hassenzahl, 2013). Nonostante l'interesse crescente nei confronti della corporate sustainability (CS), sia in ambito accademico che nella business community, risultano ancora assai limitati gli studi che trattano di valutazione della comunicazione per la sostenibilità nei contesti digitali (Parker *et al.*, 2010; Lundquist, 2012). Emergono ancora difficoltà, da parte delle organizzazioni che si dichiarano sostenibili, nel misurare e migliorare i fattori critici che consentono di implementare un'efficace *sustainability communication*.

Partendo da queste considerazioni, il paper mira a colmare un gap in letteratura attraverso la costruzione di un modello operativo finalizzato a valutare e migliorare la *sustainability communication online* delle organizzazioni profit e non profit, veicolata tramite i siti web aziendali.

2. Literature review

La *sustainable corporation* si sta progressivamente affermando come un nuovo paradigma di business, considerato essenziale per lo sviluppo e la competitività delle organizzazioni (Elkington, 1994; Baumgartner, 2009; Iasevoli e Massi, 2012). L'adozione di un approccio di management basato sulla sostenibilità può essere inteso come una vera e propria "filosofia di governo" (Golinelli e Volpe, 2012). L'orientamento alla sostenibilità definisce gli elementi che fondano l'identità e i *core value* dell'impresa, evidenziando nella finalità istituzionale l'impegno aziendale nei confronti delle "3P" (Planet, People e Profit) (Savitz e Weber, 2006). In rapporto al modello del "The triple bottom line" (TBL), un'organizzazione si può definire sostenibile se è in grado di garantire il giusto equilibrio tra il conseguimento di risultati economici, la preservazione delle risorse ambientali e il progresso sociale (Quaddus e Siddique, 2011).

L'interesse e la sensibilità crescente nei confronti della sostenibilità da parte degli stakeholder aziendali hanno indotto le organizzazioni ad adottare canali adeguati per comunicare il proprio impegno in tale ambito, soprattutto nei contesti online (Gill *et al.*, 2008; Moreno e Carpriotti, 2009; Illia *et al.*, 2015). La comunicazione per la sostenibilità negli ambienti digitali sta diventando un tema di fondamentale importanza nell'ambito del management delle organizzazioni che si dichiarano sostenibili (Gomez e Chalmeta, 2011). Sempre più spesso queste ultime adottano canali di comunicazione online al fine di evidenziare l'impegno aziendale nei confronti delle principali tematiche di sostenibilità (impatti ambientali, implicazioni sociali, creazione e conservazione della ricchezza) (Edwards, 2005; Crane e Matten, 2007; Perrini e Tencati, 2011). Nel contesto attuale, i nuovi media e gli spazi virtuali rappresentano un'opportunità per accrescere la corporate reputation delle organizzazioni, attraverso il "dialogo aperto" con gli stakeholder (Illia *et al.*, 2015).

Tra gli strumenti maggiormente utilizzati dalle organizzazioni, un ruolo particolarmente rilevante è quello assunto dai website, in quanto consentono un'esplicitazione più diretta e immediata degli *statement* e del *commitment* aziendale (Rowbottom e Lymer, 2009; Sanil e Ramakrishnan, 2015). In questa prospettiva, la comunicazione online diviene un "vettore relazionale" in grado di connettere l'impresa con i propri stakeholder ed accrescere la corporate reputation (Fombrun, 2001; Fombrun e van Riel, 2004; Cornelissen, 2011).

La corporate communication è volta a trasmettere in modo adeguato gli impegni assunti dall'organizzazione sostenibile, evitando disallineamenti tra quanto quest'ultima dichiara in termini di "promesse" e la sua effettiva capacità di portare a termine i risultati attesi, con successive attività di rendicontazione di ciò che è stato concretamente conseguito (Siano, 2014; Siano *et al.*, 2015).

D'altra parte, il disallineamento tra promesse e risultati concreti è fonte di rischio reputazionale (Gaultier-Gaillard e Louisot, 2006; Gaudenzi, 2015).

Alla luce degli impegni e degli obiettivi assunti, le organizzazioni *sustainability oriented* hanno, dunque, un elevato potenziale di rendimento in termini di capitale reputazionale ma, allo stesso tempo, risultano maggiormente esposte al rischio reputazionale. Tale rischio è fortemente alimentato se l'impresa attua una comunicazione di pura "facciata", senza il supporto di azioni realmente implementate. In tal caso, si incorre nel c.d. *greenwashing* (Delmas e Burbano, 2011; Lyon e Montgomery, 2015), ossia nelle pratiche di "cosmesi" dell'identità aziendale (*identity-washing*), volte a manipolare o nascondere gli aspetti più controversi dal punto di vista della sostenibilità, distogliendo l'attenzione degli stakeholder da condotte in realtà "non etiche". Il rischio di *greenwashing* risulta amplificato in considerazione del maggiore potere di denuncia che i consumatori acquisiscono negli ambienti web (Kucuk e Krishnamurthy, 2007).

Lo sviluppo di un orientamento alla sostenibilità richiede l'esplicitazione di sistemi di governance, ovvero di strutture e prassi attraverso cui l'organizzazione gestisce le relazioni con i propri stakeholder, al fine di integrare le istanze di sostenibilità nella propria gestione (Arrigo, 2006). In tale prospettiva, un'organizzazione *sustainability oriented* deve dotarsi di un modello organizzativo in grado di mettere in pratica i principi e gli obiettivi dichiarati (Farné, 2012). È noto che i meccanismi di governo, come anche i processi decisionali, possono essere formalizzati in termini di strutture ed organigrammi, con chiare assegnazioni delle responsabilità.

Nell'ambito del modello organizzativo delle imprese sostenibili si possono individuare diverse strutture e attori, che agiscono a livello sia strategico che operativo (Sebastiani, 2014). Da un punto di vista strategico, è possibile riscontrare la presenza di istituzioni che governano la sostenibilità aziendale, approvandone le linee strategiche, come il *Sustainability Board*, il *Board Commette*, il Consigliere o Referente per la sostenibilità, ecc. (Siano, 2014; Pedrini *et al.*, 2015). A livello operativo, si rileva, invece, la presenza di sub-unità organizzative che si occupano esclusivamente della gestione della sostenibilità (Birth *et al.*, 2008). In questo caso, si possono individuare: la Funzione di CSR, il *Sustainable Department*, il *Sustainability Manager*, ecc.

I website delle organizzazioni sostenibili presentano, frequentemente, una sezione dedicata all'esplicitazione dei modelli organizzativi e degli strumenti di governance adottati. In relazione a quest'ultimo aspetto, l'importanza del reporting è cresciuta nel corso degli ultimi anni in maniera esponenziale, comportando la progressiva diffusione nei siti istituzionali dei bilanci (o report) di sostenibilità, redatti nel rispetto dei principi definiti da organismi internazionali (es. GRI) (Manetti, 2006; Marimon *et al.*, 2012). Le potenzialità offerte dal web hanno determinato il proliferare di approcci di reporting più interattivi, al fine di un maggior coinvolgimento degli stakeholder (Fisher *et al.*, 2004; Coupland, 2006; Tarquinio e Rossi, 2014). I meccanismi di reporting interattivo, la trasparenza e l'*accountability* sono, dunque, divenuti parte integrante della comunicazione per la sostenibilità nei contesti digitali, al fine di garantire agli stakeholder una sempre maggiore congruenza tra comunicazione aziendale ed azioni realmente implementate (Fukukawa e Moon, 2004).

Oltre al bilancio sociale, le imprese che si dichiarano sostenibili utilizzano altri strumenti di corporate governance per comunicare il proprio *commitment*. A questo proposito, ad assumere un ruolo rilevante sono il codice etico e di condotta (Salvioni *et al.*, 2004; Guerci, 2011), le certificazioni (Serra, 2000; Gallastegui, 2002) e l'adesione a specifici indici di sostenibilità (Amaladoss *et al.*, 2001; Màrquez e Fombrun, 2005; Gazzola, 2012).

Nel contesto attuale, il coinvolgimento degli stakeholder nelle tematiche sociali, ambientali ed economiche è considerato un aspetto fondamentale nella gestione delle attività aziendali (Greenwood, 2007). Un'organizzazione realmente sostenibile inevitabilmente promuove processi di stakeholder engagement, in quanto è tesa a dialogare con i propri portatori d'interesse, al fine di creare "valore condiviso" (Porter e Kramer, 2011; Illia *et al.*, 2015).

Le potenzialità del web supportano i processi di comunicazione bidirezionale e multidirezionale con i pubblici d'impresa (Ledingham e Bruning, 2000). Con l'avvento di internet emerge, infatti, un progressivo spostamento del "potere" dall'impresa agli stakeholder che,

dall'essere destinatari passivi dei messaggi, diventano soggetti attivi nella generazione di "nuovi contenuti" (*user-generated content*) (OECD, 2007; Sridhar e Srinivasan, 2012, Singer, 2014).

Al fine di fronteggiare il progressivo *consumer empowerment* (Pires *et al*., 2006; Rezabakhsh *et al*., 2006), le organizzazioni hanno sempre più la necessità di adottare, soprattutto in ambito digitale, meccanismi partecipativi in cui si attribuisce priorità al confronto attivo con i pubblici. Il processo di stakeholder engagement deve essere integrato nella strategia complessiva di comunicazione online, sfruttando le potenzialità offerte dai website e dalle aree dedicate alle relazioni con gli stakeholder (Kucuk e Krishnamurthy, 2007). Nell'ambito del sito web, è opportuna la presenza di strumenti in grado di favorire processi "inclusivi", che si sostanziano in forme di collaborazione strutturate e modalità di coinvolgimento personalizzate. Quest'ultime valorizzano i feedback provenienti dai diversi stakeholder, consentendo agli stessi di incidere sui processi decisionali aziendali (Miles *et al*., 2006).

La predisposizione di adeguati strumenti di ascolto, in grado di individuare le aspettative degli stakeholder, consente di migliorare la gestione degli interventi in tema di sostenibilità. Assume, così, un ruolo rilevante il processo di analisi delle priorità, e della relativa matrice, volta a ponderare le tematiche di interesse degli stakeholder incrociandole con la strategia aziendale (Eccles *et al*., 2012). Inoltre, il dialogo tra organizzazione e stakeholder è agevolato dall'adozione di strumenti online che supportano i processi di engagement. I principali mezzi in grado di consentire, nell'ambito del sito web, l'interazione con pubblici sulla sostenibilità, sono i blog, i forum, le community online, i glossari, le FAQ (Michelini, 2007). L'adozione di tali strumenti favorisce la creazione di relazioni fiduciarie e il coinvolgimento continuo degli stakeholder nelle dinamiche aziendali.

Al fine di conferire legittimità alle attività aziendali, le organizzazioni *sustainability oriented* devono comunicare, in modo costante, il loro impegno verso le cause socialmente rilevanti, le motivazioni alla base delle azioni di sostenibilità e la coerenza tra le iniziative promosse e l'orientamento aziendale (Menon e Kahn, 2003; Gomez e Chalmeta, 2011). La comunicazione dei contenuti sugli impatti economici, ambientali e sociali delle attività aziendali, definiti in letteratura come "sustainability information", è ampiamente dibattuta negli ultimi anni (Rowbottom e Lymer; 2009). La rete internet si è progressivamente affermata come canale privilegiato per la diffusione di tali informazioni e il website è divenuto una fonte prioritaria di divulgazione dei contenuti sui temi di sostenibilità aziendale (Williams e Pei, 1999; Campbell *et al*., 2004, Tagesson *et al*., 2009). L'utilizzo del web offre, infatti, all'azienda una maggiore flessibilità nel gestire le informazioni, con la possibilità di effettuare aggiornamenti continui.

Possono essere considerate tre dimensioni ai fini della classificazione dei contenuti rilevanti nell'ambito della comunicazione per la sostenibilità nei siti web (Porter e Kramer, 2006):

- contenuti connessi al *core business*, che si riferiscono ad attività che hanno un forte impatto sull'area di business e sulla competitività di un'organizzazione;
- contenuti che impattano sulla *value chain*, che riguardano le attività che influiscono in modo significativo sui processi aziendali, primari e di supporto;
- contenuti sociali di interesse generico, che non sono significativamente connessi all'operato di un'organizzazione, ma si riferiscono ad azioni filantropiche di carattere generale.

Allo scopo di garantire un'adeguata implementazione della *sustainability communication*, i contenuti devono rispettare determinati principi di comunicazione, incidendo positivamente sulla percezione dei pubblici. Tali principi sono fondamentali per lo sviluppo del capitale reputazionale (van den Bosch *et al*., 2005). Si riferiscono alle dimensioni della visibilità, chiarezza, autenticità, accuratezza, coerenza e completezza (Fombrun e van Riel, 2004).

Inoltre, al fine di garantire un'efficace comunicazione per la sostenibilità nel contesto digitale, il website deve fornire all'utente un adeguato comfort nella navigazione (Ladwein, 2001). La qualità del rapporto tra l'utente e il sito istituzionale è determinata dal livello di ergonomia, il cui obiettivo è creare un'interfaccia in grado di garantire un'adeguata fruizione dei contenuti (Mich *et al*., 2003; Chevalier e Kicka, 2006).

3. Metodo

Il modello proposto è stato costruito in due fasi. In una prima fase, è stata svolta la rassegna della letteratura in tema di corporate sustainability e di digital communication (Fuchs, 2008; Benn *et al.*, 2014; Sanil e Ramakrishnan, 2015). Nell'ambito di questa fase, la ricerca ha permesso di selezionare, in una prospettiva *top down*, le macro categorie di riferimento (macro-item), vale a dire i fondamentali elementi che impattano sulle attività di comunicazione per la sostenibilità nei siti web (Siano *et al.*, 2015). Le macro dimensioni individuate sulla base della rassegna della letteratura sono state poi sottoposte ad un riscontro e una validazione sul piano empirico, attraverso l'esame dei website delle organizzazioni classifice dal Reputation Institute nel *Global CSR RepTrak* 2015. L'analisi *bottom up* svolta su questi siti web ha previsto, in aggiunta, l'individuazione del set di item e di micro-item per ciascuno dei macro-item profilati. Dalle deduzioni tratte dalla *literature review* e dalle induzioni scaturite dall'esame dei website sono così derivate le indicazioni per l'architettura e la gerarchia piramidale dei fattori e dei livelli del modello: i macro-item (a livello superiore), gli item (a livello intermedio) e i micro-item (a livello inferiore).

Il meccanismo di assegnazione del punteggio ai fattori che compongono il modello operativo ha adottato il criterio dell'equiripartizione. Secondo tale criterio, il punteggio di ciascun micro-item contribuisce in egual misura alla determinazione del punteggio finale totalizzato dal sito web preso in esame. Tale criterio di ponderazione degli elementi rientra nel principio di "distribuzione ad albero dei pesi", suddivisi a seconda del numero degli indicatori che sono presenti in una medesima area tematica (Brusa, 2008). Di conseguenza è risultato che ognuno dei macro-item presenta un range con un valore massimo pari alla somma dei punteggi dei micro-item corrispondenti.

I micro-item individuati sono stati poi trattati come variabili dicotomiche. Essi presentano due modalità alternative: riscontro oppure assenza del singolo micro-item. Per la misurazione di alcuni micro-item si è reso necessario costruire un indice additivo comprendente la rilevazione di cinque variabili dicotomiche, per tener conto degli aspetti che li caratterizzano.

La preferenza per le variabili dicotomiche è stata giustificata dal fatto che esse comportano una minore difficoltà di operazionalizzazione, rispetto alle variabili rilevabili con tecniche di scaling. La semplificazione che si associa al trattamento di variabili dicotomiche se da un lato può apparire un punto di debolezza del modello, dall'altro presenta il non trascurabile vantaggio di consentire una più agevole rilevazione, riducendo la soggettività e l'ambiguità insite in questo tipo di attività.

In una seconda fase, il modello operativo è stato sperimentato mediante la sua applicazione ad un campione di imprese appartenenti sia ad un settore manifatturiero che ad un settore dei servizi. Lo studio pilota, condotto su piccola scala, è servito a valutare la bontà del modello e a consentire eventualmente di apportare ad esso modifiche e miglioramenti prima di impiegarlo in indagini su larga scala.

Lo studio pilota ha preso in esame i settori farmaceutico e bancario. Per ciascuno di essi sono stati valutati i siti web delle rispettive prime dieci aziende classifiche da Mediobanca in base al fatturato.

4. Il modello operativo: architettura e metriche

L'architettura piramidale prevista dal modello di valutazione della comunicazione per la sostenibilità nei website distingue tre livelli collocati in senso gerarchico: marco-item, item e micro-item. Rispetto a questi ultimi va svolta la rilevazione degli elementi utili per valutare i siti web. Gli item costituiscono, invece, costrutti che servono a raggruppare micro-item per categorie di omogeneità. I macro-item, infine, posti al livello più elevato della piramide, raggruppano per categorie omogenee i vari item del modello.

Il modello è costruito sulla base della seguente articolazione (v. fig. 1):

- 4 macro-item;
- 11 item;

- 64 micro-item.

L'individuazione dei quattro macro-item (orientamento strategico, struttura, ergonomia, contenuti) deriva dall'esame della letteratura in materia di corporate sustainability e digital communication, nonché degli studi di website analysis in tema di *corporate social responsibility communication*, i cui risultati sono convalidati, sul piano empirico, dai fattori riscontrati nei website delle organizzazioni classificate dal Reputation Institute nel *Global CSR RepTrak 2015*.

L'acronimo derivante dalle iniziali dei macro-item individuati (OSEC) dà il nome al modello operativo proposto. L'orientamento presenta due item (mission e vision) e sei micro-item. La struttura comprende due item (stakeholder engagement e governance di sostenibilità) e diciassette micro-item. L'ergonomia contiene cinque item (accessibilità, navigabilità, usabilità, interattività, multimedialità) e diciannove micro-item. I contenuti sono suddivisi in due item (iniziative in tema di sostenibilità e principi di comunicazione) e ventidue micro-item.

Orientamento strategico espresso nel website

L'orientamento rappresenta l'approccio strategico di base che definisce gli elementi fondanti l'identità di un'organizzazione. Tale approccio si traduce, nell'ambito dei website, in *statement* volti ad evidenziare i valori guida e la filosofia aziendale, orientata al rispetto delle esigenze economiche, sociali ed ambientali degli stakeholder. Nei siti web istituzionali gli *statement* solitamente trovano collocazione in sezioni dedicate (es. "Chi siamo", "Profilo aziendale").

A livello strutturale, l'orientamento è costituito da due item: "mission" (O.m.), intesa come l'esplicitazione dell'impegno aziendale verso le tematiche di sostenibilità, nella dichiarazione delle finalità istituzionali e delle attività scelte; e "vision" (O.v.), che rappresenta il modo secondo il quale viene prefigurato il futuro dell'impresa in termini di *commitment* di corporate sustainability. Gli item "mission" e "vision" comprendono rispettivamente tre micro-item che valutano la presenza di espliciti riferimenti alla sostenibilità ambientale, sociale ed economica. Il totale dei micro-item dell'orientamento è pari a 6.

Struttura e strumenti del website

Tenendo presente il significato di "struttura" nell'Approccio Sistemico Vitale (Golinelli, 2011), il secondo macro-item può essere inteso come l'insieme di strumenti ed elementi organizzativi in grado di favorire la credibilità delle informazioni veicolate e le relazioni con gli utenti nell'ambito del website. Due item definiscono l'assetto strutturale del sito web: "stakeholder engagement" (S.se.), che comporta processi partecipativi volti a facilitare il coinvolgimento degli stakeholder nelle pratiche aziendali; e "governance di sostenibilità" (S.gs.), definita come insieme di strutture e modelli organizzativi, con chiare assegnazioni delle responsabilità nella gestione della sostenibilità aziendale.

L'item "stakeholder engagement" comprende a sua volta due dimensioni. La prima si riferisce alle "sezioni del sito" (S.se.ss.) predisposte per i diversi stakeholder, la seconda riguarda gli "strumenti di stakeholder engagement" (S.se.st.). L'item della "governance di sostenibilità" considera, invece, due aspetti rilevanti. Il primo si riferisce al "modello organizzativo" (S.gs.mo.), in cui si rileva la presenza di un *Board* di sostenibilità a livello strategico e funzioni o ruoli operativi, il secondo è connesso alla valutazione degli strumenti di governance e di *corporate identity*. Il totale dei micro-item della struttura è pari a 17.

Ergonomia del website

L'ergonomia del website riguarda la capacità dello stesso di garantire facilità nel processo di navigazione e adeguata fruizione dei contenuti da parte degli utenti (Adams *et al.*, 2006). Da essa, infatti, dipende la semplicità e l'omogeneità dell'architettura informativa, nonché la funzionalità del sito web. Tale macro dimensione si compone di cinque item:

- "accessibilità" (E.a.), si riferisce al rispetto di requisiti tecnici che rendono il sito web fruibile da una qualsiasi tipologia di utente;

- "navigabilità" (E.n.), riguarda tutti i metodi impiegati per consentire all'utente di orientarsi nella ricerca delle informazioni nel website;
- "usabilità" (E.u.), misura la qualità dell'esperienza dell'utente nell'interazione con il sito, in quanto soddisfa i bisogni informativi richiesti, consentendo facilità d'uso e comprensione dei contenuti;
- "interattività" (E.i.), riguarda la presenza nell'ambito del sito web di flussi di comunicazione bidirezionale in grado di coinvolgere gli utenti nel processo di navigazione;
- "multimedialità" (E.m.), si riferisce all'utilizzo simultaneo ed integrato di diversi media all'interno del website.
  Il totale dei micro-item dell'ergnomia è pari a 19.

Fig.1: Architettura dei fattori del modello OSEC distinti in macro-item, item e micro-item

Fonte: ns. elaborazioni

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Contenuti presenti nel website

Il quarto macro-item del modello operativo considera i contenuti in tema di sostenibilità, ovvero l'insieme delle informazioni sugli impatti economici, ambientali e sociali delle attività aziendali, veicolate attraverso il website. Gli item riferiti ai contenuti riguardano sia le "iniziative di sostenibilità" (C.i.), definite da Porter e Kramer (2006) in contenuti connessi al *core business* (C.i.1.), contenuti che impattano sulla *value chain* (C.i.2.), e contenuti sociali di interesse generico (C.i.3.); sia i "principi di comunicazione" (C.pc.). Questi ultimi devono essere rispettati nella formulazione dei messaggi e nella trasmissione dei contenuti nell'ambito dei siti web, e riguardano diverse dimensioni, di seguito descritte (Fombrun e van Riel, 2004):

- "visibilità" (C.pc.v.), rappresenta la capacità dell'organizzazione di rendere visibili, rintracciabili e fruibili le proprie attività di comunicazione per la sostenibilità;
- "chiarezza" (C.pc.ch.), intesa come la capacità di comunicare in modo univoco e comprensibile, senza creare dubbi e fraintendimenti;
- "autenticità" (C.pc.au.), si riferisce ad una comunicazione non solo veritiera, ma anche verificabile e verificata, attraverso il supporto di fonti credibili;
- "accuratezza" (C.pc.ac.), ovvero la capacità della comunicazione di riferirsi ad aspetti specifici, concreti e dimostrabili, evitando affermazioni generiche e vaghe;
- "coerenza" (C.pc.coe.), intesa come la capacità dell'impresa di veicolare contenuti di sostenibilità in linea con gli impegni assunti nell'orientamento aziendale;
- "completezza" (C.pc.com.), si riferisce alla presenza sul sito degli elementi chiave in termini di comunicazione per la sostenibilità, in modo da soddisfare tutte le esigenze informative degli stakeholder.

Il totale dei micro-item dei contenuti è pari a 22.

Punteggi

Nel modello l'attribuzione del punteggio per valutare la comunicazione per la sostenibilità è stata collocata a livello delle unità elementari, vale a dire dei micro-item. Allo scopo di garantire modalità univoche nella rilevazione delle caratteristiche dei siti web rispetto ai micro-item del modello OSEC, vengono definite apposite linee guida che indicano:

- le variabili da prendere in considerazione;
- le domande che il ricercatore deve porsi per individuare ciascun micro-item;
- le procedure e le indicazioni di cui tener conto per la rilevazione dei micro-item.

Il range scelto per l'attribuzione del punteggio (score) di ciascun website da esaminare varia da 0 a 100. Nell'ambito di questo range si colloca il punteggio finale, il quale rappresenta un valore complessivo derivante dalla sommatoria dei punteggi dei singoli macro-item del modello conseguiti rispetto al singolo website preso in esame. Per ogni macro-item il punteggio conseguibile è fissato nell'ambito del rispettivo range prestabilito ed è frutto della misurazione dei corrispondenti micro-item. Se riscontrato in fase di rilevazione, ogni singolo micro-item comporta un punteggio di 1,5625[1]. Tale valore base è ottenuto dividendo il valore di 100 (massimo punteggio conseguibile) per il numero totale di micro-item di cui si compone il modello (64). Tenendo conto che i macro-item presentano valori proporzionali al numero di micro-item che li compongono, si ottengono i seguenti range:

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[1] Nell'ambito del macro-item "struttura", per i micro-item S.se.ss.1., S.se.ss.2., S.se.ss.3. è stato costruito un indice additivo che comprende scale di graduazione a cinque punti. Ad esempio, per la rilevazione di S.se.ss.1., non si valuta la presenza/assenza di un singolo fattore, bensì la numerosità delle sezioni di "stakeholder engagement", considerando la presenza/assenza delle principali sezioni (cinque variabili dicotomiche) di cui un corporate website dovrebbe essere dotato in relazione agli stakeholder maggiormente rilevanti (media, dipendenti, investitori, consumatori, comunità). In tal caso, il valore da assegnare può variare da 0 a 5, in cui "5" equivale al punteggio massimo di 1,5625.

- Orientamento: 0-9,375, dove il valore 9,375 è ottenuto moltiplicando 1,5625 per il corrispondente numero di micro-item (pari a 6);
- Struttura: 0-26,5625, dove il valore 26,5625 è ottenuto moltiplicando 1,5625 per il corrispondente numero di micro-item (pari a 17);
- Ergonomia: 0-29,6875, dove il valore 29,6875 è ottenuto moltiplicando 1,5625 per il corrispondente numero di micro-item (pari a 19);
- Contenuti: 0-34,375, dove il valore 34,375 è ottenuto moltiplicando 1,5625 per il corrispondente numero di micro-item (pari a 22).

I range dei vari macro-item consentono di suddividere e valutare in modo più analitico il punteggio complessivo conseguito dal singolo sito web.

Correttivo di greenwashing

Il modello OSEC prevede una correzione del punteggio che, sulla base del riscontro dei requisiti indicati nei micro-item, è attribuibile a ciascun sito web. Il correttivo è destinato a tener conto degli impatti negativi derivanti da pratiche contrarie alla genuina comunicazione per la sostenibilità. Si tratta di ricercare eventuali segnali di *greenwashing* nei website da prendere in esame. Per individuare tali segnali è utile prendere in considerazione e integrare alcuni dei sette "peccati" (*sin*) che possono essere commessi dalle organizzazioni che si dichiarano sostenibili, definiti nel *Greenwashing Report* (Terra Choice, 2010). Per consentire un adattamento al modello operativo, sono stati esclusi i "peccati" non rilevabili attraverso l'analisi dei siti web. Per il riscontro dei segnali in oggetto, il modello suggerisce di incrociare specifici micro-item relativi all'orientamento, alla struttura e ai contenuti, secondo le indicazioni della tabella 1.

Tab. 1: Segnali di greenwashing

NOME - DESCRIZIONE	INDIZI/INDICATORI
1. *Sin of No Proof* Dichiarazioni di sostenibilità, senza un adeguato supporto di fonti credibili.	Incrocio tra i micro-item relativi all'orientamento e i micro-item che rilevano il principio di autenticità.
2. *Sin of Irrelevance* Dichiarazioni che deviano l'attenzione su temi con un impatto ridotto o nullo in termini di sostenibilità.	Incrocio tra i micro-item relativi all'orientamento e i micro-item dei contenuti connessi al *core business* o alla *value chain*.
3. *Sin of Vagueness* Dichiarazioni di sostenibilità fondate su affermazioni vaghe o imprecise.	Incrocio tra i micro-item relativi all'orientamento e i micro-item che rilevano il principio di accuratezza.
4. *Unidirectional approach to stakeholder* Dichiarazioni di sostenibilità, senza il supporto di strumenti di stakeholder engagement.	Incrocio tra il micro-item riferito all'orientamento nella sezione di sostenibilità e l'assenza dei micro-item relativi agli strumenti di stakeholder engagement.
5. *Sin of Worshiping False Labels* Presenza di "etichette" di sostenibilità (es. brand ecologico) non basate su *labelling system* riconosciute o su certificazioni di enti terzi.	Incrocio tra il micro-item riferito alla presenza di un brand ecologico e i micro-item relativi alla verificabilità delle informazioni (autenticità) e al *labelling system* (chiarezza).

Fonte: adattata da Terra Choice (2010).

Il meccanismo insito nel modello comporta una penalizzazione del punteggio che varia in relazione al numero dei micro-item che, incrociati, mostrano segnali di *greenwashing*. Ad esempio, nel caso del "Sin of No Proof", il punteggio sottratto interessa i sei micro-item che compongono gli item "mission" e "vision", ed i tre micro-item dell' "autenticità", per un totale di 9 micro-item. Il calcolo della penalizzazione è così pari a 14,0625 (= 9 x 1,5625).

5. Uno studio pilota

In questo paragrafo si riportano i risultati di uno studio pilota condotto per sperimentare l'applicabilità del modello OSEC.

Una prima sperimentazione riguarda la valutazione del website di Intesa San Paolo, istituto bancario orientato alla sostenibilità. Secondo le risultanze dell'applicazione del modello, questo sito raggiunge il punteggio di 84,38 (v. tab. 2).

Relativamente al macro-item "orientamento", il sito web di Intesa San Paolo presenta nella sezione "Chi siamo" una chiara definizione della mission e della vision, in cui emerge un evidente impegno dell'organizzazione verso le tematiche sociali, ambientali ed economiche.

Per quanto riguarda lo stakeholder engagement, primo item della "struttura", il website presenta sezioni dedicate ai principali stakeholder group, con un *set* ben strutturato di informazioni in grado di garantire una comunicazione esaustiva. Ad esempio, con riferimento all'analisi in profondità dell'area "investor relation", è possibile riscontrare tutti gli elementi chiave utilizzati in quest'ambito, tra cui informazioni finanziarie, bilanci navigabili, ecc.

Tab. 2: Valutazione del website di Intesa San Paolo (anno 2015) secondo i requisiti della comunicazione per la sostenibilità previsti nel modello operativo OSEC

	MACRO-ITEM				CORRETTIVO GREEN-WASHING	PUNTEGGIO
	Orientamento (0-9,375)	Struttura (0-26,5625)	Ergonomia (0-29,6875)	Contenuti (0-34,375)		
Intesa San Paolo	9,3750	21,8750	21,8750	31,2500	-	84,38

Fonte: Ns elaborazioni.

Il sito in esame mostra, nella sezione "sostenibilità", diversi strumenti di stakeholder engagement, come la matrice di materialità, i grafici interattivi, le FAQ in tema di sostenibilità, ecc.

Relativamente al secondo item della "struttura" (governance di sostenibilità), il sito presenta una sezione dedicata al "governo della CS", in cui si evidenzia il ruolo della funzione di CSR, unità istituita per monitorare e coordinare le diverse tematiche legate alla sostenibilità. Responsabile di tale funzione è il *Chief Governance Officer* che si relaziona, a livello strategico, con il CEO, il Presidente del Consiglio di Gestione e il Presidente del Consiglio di Sorveglianza. La funzione opera in collaborazione con un network di referenti presenti nelle diverse unità operative in Italia e all'estero. Inoltre, il website evidenzia la presenza di strumenti di governance come: il codice di comportamento, le certificazioni, il codice etico, gli indici e il report di sostenibilità.

In relazione alla macro dimensione dell'ergonomia e all'item dell' "accessibilità", il sito è fruibile da qualsiasi tipologia di utente, grazie al rispetto delle linee guida del W3C e presenta la funzionalità multilingue. Per quanto riguarda la "navigabilità", il sito prevede strumenti di ricerca ben evidenti in homepage, e consente, attraverso un numero ridotto di *click*, un accesso diretto alle informazioni. Intesa San Paolo ha raggiunto risultati positivi anche nei micro-item relativi ai tempi di caricamento delle pagine e alla navigabilità da mobile ("page speedinsights" e "test compatibilità mobile" di Google).

Relativamente all'item "usabilità", il sito non presenta uno *scrolling* orizzontale e quello verticale non risulta essere eccessivo. Inoltre, in homepage non si riscontrano contenuti non richiesti dall'utente. L'usabilità è facilitata anche dall'esplicitazione dei percorsi di navigazione. Con riferimento all'item "interattività", nel sito si riscontrano sezioni e strumenti che consentono un'interazione bidirezionale, come aree riservate e di *customer care*. Per quanto concerne l'item "multimedialità", il website presenta immagini, video e disegni esplicativi che facilitano la comprensione intuitiva dei contenuti, agevolandone il processo di fruizione.

Infine, il sito web raggiunge un risultato positivo su tutte e tre le tipologie di contenuti considerate dal modello. I contenuti di *core business* riguardano le attività di educazione finanziaria; quelli che impattano sulla *value chain* si riferiscono alle iniziative rivolte alla formazione del personale; mentre i contenuti generici hanno ad oggetto attività di sostegno al terzo settore. Il website rispetta i principi di comunicazione nella trasmissione dei contenuti. Valutando l'item relativo alla "visibilità", esso presenta una sezione di CS che evidenzia l'impegno aziendale, in termini di valori e politiche di sostenibilità perseguite dall'azienda. In relazione all'aspetto della "chiarezza", il sito è caratterizzato da un'adeguata classificazione dei contenuti e un'efficace

labelling system. Relativamente all' "autenticità", le iniziative di CS sono conformi ai valori aziendali (es. trasparenza, integrità). Tutte le informazioni contenute nella sezione, inoltre, sono supportate, oltre che da *case study* e *best practice*, da fonti attendibili e metodologie riconosciute. Per quanto riguarda il rispetto dell' "accuratezza", sul sito sono esplicitati gli impegni assunti in tema di sostenibilità ed i risultati conseguiti attraverso la pubblicazione dei bilanci di sostenibilità. Con riferimento all'aspetto della "coerenza", l'impegno aziendale risulta persistente nel tempo in quanto le iniziative intraprese dal Gruppo sono di lungo periodo. Nel sito web si riscontra, inoltre, la coerenza tra gli *statement* presenti nel profilo aziendale e l'orientamento espresso nella sezione di sostenibilità. Infine, il website rispetta il requisito della "completezza", alla luce dell'esaustività delle informazioni presenti nella sezione di CS, ovvero: impegno e valori, governance, iniziative di sostenibilità, indici e report di sostenibilità, ecc.

Benchmarking intrasettoriale ed intersettoriale

Il modello proposto consente di confrontare il website di un'organizzazione con i siti dei competitor appartenenti allo stesso settore merceologico. Lo studio pilota si occupa anche di quest'aspetto. La tabella 3 presenta il ranking dei website degli istituiti di credito italiani classificati da Mediobanca in base al fatturato. Il punteggio delle banche sconta in alcuni casi la penalizzazione da correttivo di *greenwashing* prevista nel modello.

Tab. 3: Ranking dei siti web degli istituti di credito italiani (anno 2015) secondo i requisiti della comunicazione per la sostenibilità previsti nel modello operativo OSEC

ISTITUTI DI CREDITO	MACRO-ITEM				CORRETTIVO GREEN-WASHING	PUNTEGGIO
	Orientamento (0-9,375)	Struttura (0-26,5625)	Ergonomia (0-29,6875)	Contenuti (0-34,375)		
1. Intesa San Paolo	9,3750	21,8750	21,8750	31,2500	-	84,38
2. Ubi Banca	6,2500	21,2500	20,3125	32,8125	-	80,63
3. Unicredit	3,1250	15,3125	18,7500	32,8125	-	70,00
4. BP Milano	3,1250	11,2500	23,4375	31,2500	-	69,06
5. BPER	3,1250	10,3125	21,8750	29,6875	-	65,00
6. Monte dei Paschi di Siena	3,1250	16,2500	20,3125	23,4375	-	63,13
7. BNL	0	13,1250	18,7500	26,5625	-	58,44
8. Mediobanca	6,2500	8,1250	23,4375	14,0625	-9,38	42,50
9. Dexia Crediop	1,5625	6,2500	15,6250	12,5000	-	35,94
10. Banco Popolare	9,3750	8,4375	21,8750	7,8125	-18,75	28,75
MEDIA	4,53	13,21	20,62	24,21	-2,81	59,78

Fonte: Ns elaborazioni.

Nel ranking del settore bancario il sito web di Intesa San Paolo risulta essere quello con il miglior punteggio, seguito dai siti di Ubi Banca e Unicredit. Ultimi nel ranking sono invece i website di Mediobanca, Dexia Crediop e Banco Popolare. Per il sito di Mediobanca si pone la necessità di miglioramenti soprattutto nei macro-item "struttura" e "contenuti". Per Dexia Crediop gli interventi migliorativi occorrenti riguardano i macro-item dell' "orientamento" e della "struttura". Nel caso di Banco Popolare, i macro-item su cui intervenire riguardano invece soprattutto la "struttura" e i "contenuti". Il modello consente poi di calcolare il punteggio medio dei siti web dei dieci istituiti di credito italiani. La tab. 3 evidenzia che i website totalizzano un punteggio medio pari a 59,78, con punteggi medio-alti relativi ai macro-item riferiti all' "ergonomia" (20,62) e ai "contenuti" (24,21).

Tab. 4: Ranking dei siti web delle imprese del settore farmaceutico (anno 2015) secondo i requisiti della comunicazione per la sostenibilità previsti nel modello operativo OSEC

IMPRESE FARMACEUTICHE	MACRO-ITEM				CORRETTIVO GREEN-WASHING	PUNTEGGIO
	Orientamento (0-9,375)	Struttura (0-26,5625)	Ergonomia (0-29,6875)	Contenuti (0-34,375)		
1. Chiesi	6,2500	7,8125	20,3125	25,0000	-	59,38
2. Novartis Italia	3,1250	11,2500	20,3125	23,4375	-	58,13
3. Bracco	0	7,1875	21,8750	23,4375	-	52,50
4. Menarini	6,2500	8,4375	20,3125	12,5000	-	47,50
5. Sanofi Aventis	9,3750	9,6875	18,7500	17,1875	-9,38	45,63
6. Merk Serono	3,1250	6,5625	10,9375	17,1875	-	37,81
7. Pfizer Italia	1,5625	5,9375	17,1875	18,7500	-9,38	34,06
8. Comifar	1,5625	5,0000	12,5000	15,6350	-9,38	25,31
9. Angelini	3,1250	4,3750	21,8750	3,1250	-18,76	13,75
10.Artsana Group	3,1250	0,6250	10,9375	14,0625	-29,66	0
MEDIA	3,75	6,69	17,50	17,03	-7,66	37,40

Fonte: Ns elaborazioni.

Oltre al *benchmarking* intrasettoriale, il modello permette anche una comparazione intersettoriale tra i website di aziende appartenenti a settori diversi. Questo tipo di comparazione completa lo studio pilota. Vengono confrontati i risultati ottenuti dalla sperimentazione del modello sui siti web di aziende di settori molto diversi tra loro: il settore bancario (appartenente alla categoria dei servizi) e il settore farmaceutico (tradizionalmente classificato come manifatturiero) (v. tab. 4). Dalla comparazione emergono significative differenze. Il punteggio più elevato conseguito nel settore bancario è di 84,38, mentre nel settore farmaceutico il valore massimo raggiunto è di 59,38. È interessante notare che il punteggio massimo nel settore farmaceutico risulta sostanzialmente allineato al punteggio medio dei primi dieci istituti di credito italiani. A motivo di questa differente situazione di punteggio per le prime dieci aziende dei due settori presi in esame, risulta che il conseguimento di uno score di 50 punti nel ranking del settore bancario comporta il posizionamento in una fascia medio-bassa, mentre lo stesso punteggio si colloca in una fascia medio-alta nel settore farmaceutico. Quest'ultimo, infatti, raggiunge un punteggio medio pari a 37,40, conseguendo punteggi più bassi relativamente all' "orientamento" (3,75) e alla "struttura" (6,69) (se rapportati ai loro valori massimi, pari rispettivamente a 9,375 e a 26,5625).

Fig. 2: Gap tra le medie dei punteggi dei siti web delle prime dieci aziende dei settori bancario e farmaceutico
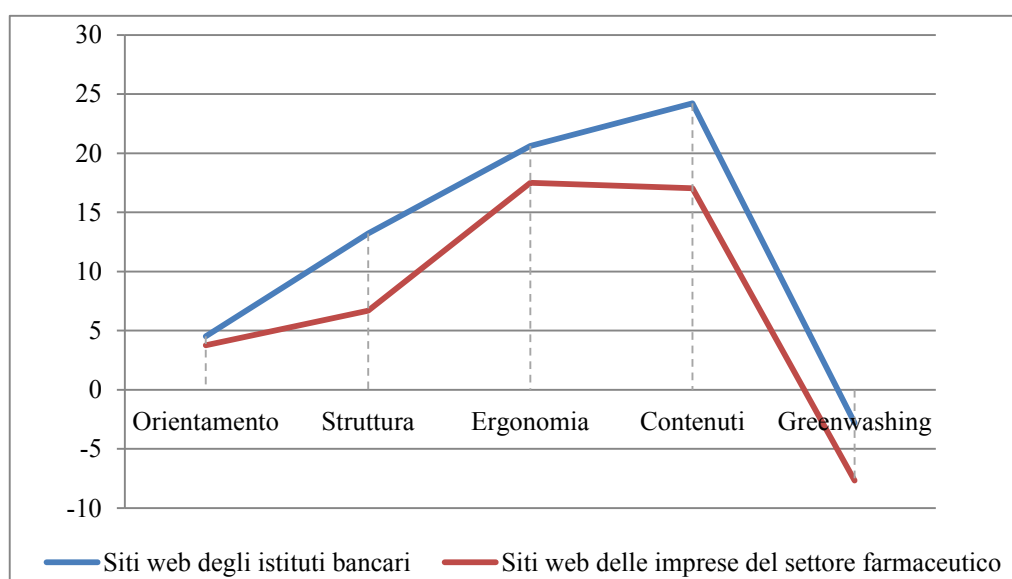
Fonte: Ns elaborazioni.

Il *benchmarking* intersettoriale pone in evidenza i gap tra i valori medi delle prime dieci organizzazioni del settore bancario e di quello farmaceutico (v. fig. 2). Come può notarsi, il maggior divario si registra relativamente ai macro-item "struttura" e "contenuti", e in relazione al correttivo di *greenwashing*, mentre gap di minore entità sussistono per i macro-item "orientamento" ed "ergonomia". È soprattutto in termini di assetto strutturale e di contenuti dei siti web che le principali imprese farmaceutiche dovrebbero investire per migliorare i requisiti della loro comunicazione per la sostenibilità online. Inoltre, dovrebbero ridurre le esposizioni ai fenomeni di *greenwashing*.

6. Implicazioni e future ricerche

La proposta del modello operativo in oggetto consente di ampliare gli studi che trattano di valutazione e miglioramento della comunicazione per la sostenibilità nei contesti digitali (Parker *et al.*, 2010; Lundquist, 2012).

Il modello proposto è di tipo normativo in quanto individua una serie di elementi necessari per l'adeguata *sustainability communication*. Mira ad offrire indicazioni su come misurare i requisiti di tale tipo di comunicazione nei website. La misurazione e l'attribuzione di punteggio deriva dal confronto tra le effettive caratteristiche dei siti web e i requisiti espressi dal modello a livello di micro-item. La misurazione e il punteggio che ne derivano consentono poi di valutare i siti e apportare miglioramenti mirati.

I punteggi dei macro-item segnalano le aree di criticità su cui intervenire, agendo sui corrispondenti micro-item che mostrano inadeguatezza. Le eventuali penalizzazioni previste nel modello evidenziano, inoltre, la presenza di una comunicazione di "cosmesi" adottata nell'ambito del website, fornendo indicazioni relative agli item coinvolti. Il modello indica quali pratiche organizzative sono da modificare al fine di evitare il rischio di *greenwashing*. Questa funzione di indirizzo è giustificata dalla natura normativa del modello.

Considerato nei suoi elementi distintivi (architettura piramidale dei fattori, variabili dicotomiche, range di attribuzione dei punteggi, fattore di correzione di *greenwashing*), il modello in esame rappresenta uno strumento di valutazione che si presta ad un'ampia applicazione. Lo studio pilota condotto sui siti web delle aziende dei due settori presi in esame conferma l'applicabilità del modello e mostra i vari tipi di analisi e valutazioni che quest'ultimo rende possibili, ai fini della diagnosi e degli interventi correttivi in materia di *sustainability communication online*. Il *pilot study* mostra come utili indicazioni per migliorare i website possano derivare da *benchmarking* intrasettoriali e intersettoriali (Scozzese, 2005; Stapenhurst, 2009). Il confronto tra i punteggi ottenuti dall'esame dei siti web di imprese operanti nello stesso ambito merceologico (*benchmarking* intrasettoriale) permette di individuare l'organizzazione che presenta i migliori requisiti per la comunicazione della sostenibilità attraverso il sito web. Come tale, costituisce un riferimento nel settore, esprimendo *best practice* a cui ispirarsi per migliorare la qualità della comunicazione per la sostenibilità.

Rilevante è anche la possibilità di compiere *benchmarking* intersettoriali. Il non limitarsi al proprio settore industriale comporta la possibilità di ispirarsi anche a pratiche meglio strutturate ed implementate nei website di organizzazioni di altri ambiti settoriali. In effetti, i *benchmarking* intersettoriali consentono di identificare *best in class* in diversi contesti merceologici e pratiche efficaci di comunicazione che possono fungere da suggerimenti utili al miglioramento dei website.

Le considerazioni che precedono fanno facilmente intuire le implicazioni manageriali. Grazie all'impiego del modello, i responsabili e i consulenti della digital communication hanno la possibilità di valutare e migliorare la comunicazione per la sostenibilità nei website delle organizzazioni in cui operano, agendo con interventi correttivi nelle aree che presentano criticità. La segnalazione degli item coinvolti nelle azioni di *greenwashing*, inoltre, fornisce ai manager indicazioni in merito alle pratiche organizzative da modificare al fine di evitare di incorrere in tale fenomeno negativo per la corporate reputation.

Di particolare rilevanza per i professionisti della comunicazione è anche la costruzione di ranking di settore, resi possibili dal modello. Analizzati in chiave comparativa, essi permettono di identificare *best in class* ed esplicitare *best practice* in termini di pratiche efficaci di *sustainability communication online*.

Spazi per ulteriori sviluppi del modello sembrano legati alle potenzialità delle funzioni e delle tecniche dell'infografica (Cairo, 2013; Bottazzini, 2014). Software specifici possono tradurre graficamente, in modo immediato e intuitivo, i risultati emersi dall'applicazione del modello operativo. L'infografica può dimostrarsi uno strumento vantaggioso in grado di fornire ai professionisti del settore una più chiara ed incisiva visione delle "aree critiche" per individuare i tipi di intervento occorrenti per migliorare la comunicazione per la sostenibilità.

I risultati dello studio pilota condotto fanno presumere che il modello risulti applicabile ai website non soltanto delle organizzazioni imprenditoriali di ampie dimensioni, ma anche delle piccole e medie imprese, nonché delle organizzazioni non profit. La sperimentazione andrebbe perciò spinta in queste altre direzioni per testare l'applicabilità del modello, così come occorrerebbe verificare se il modello operativo possa essere adottato per analizzare e valutare la comunicazione per la sostenibilità nei website delle organizzazioni multi-brand. In questo caso, per una rilevazione esaustiva di alcuni micro-item (come presenza di community, corporate blog, certificazioni, ecc.), si tratterebbe di sperimentare se è il caso o meno di consultare oltre che i siti corporate, anche i siti web di ciascun product brand.

Ai fini delle ricerche future, sarebbe poi interessante verificare la possibilità di applicazione del modello proposto ad altri ambiti di comunicazione digitale, in virtù di opportuni adattamenti. Misurare i requisiti della comunicazione per la sostenibilità nelle conversazioni che avvengono nei social media (Reilly e Hynan, 2014) e conoscere su quali variabili agire con azioni mirate, può rivelarsi di grande interesse per gli studiosi e per i professionisti della comunicazione d'impresa.

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Global strategic managerial communication in the digital economy

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Abstract

Objectives. *This paper investigates the firm's effectiveness of Global Managerial Communication in the era of ICT's hyper evolution, through which its communicative activities (verbal, written, and visual) experience digital transformation with internal and external stakeholders, demands cautious planning, implementation and execution, regardless of the industry or the level of communication.*

Methodology. *This qualitative study uses a data set from a convenience sample of participants from the 2014 Fortune top 100 global companies. A total of 27 firms, or 27% of the target population, participated in the study.*

Findings. *The results of the study confirm that effective - confidential and accurate - digital communication strategies and an appropriate communication policy and plan implementation is conducive to the firm's success. The complexity and criticality of communication of information in the digital era will remain a hot topic for discussion.*

Research limits. *This study had several challenges. Ironically, as the study was about communication, the researchers who collected the data could not immediately connect with the right department or person who could confirm if the company had a communication policy in place. Although several attempts were made to communicate by e-mail with many participants, a significant number of automated email responses were received.*

Practical implications. *Knowing how to communicate ethically and effectively in every business situation is not only important but critical to business success. From sensitively articulated employee feedback to persuasive announcements to customers, today's executive must be a frontline communicator.*

Originality of the study. *This paper discusses the topic of global managerial communication within the context of the digital economy. The results of the study confirm that effective - confidential and accurate - digital communication strategies and an appropriate communication policy implementation is conducive to the firm's success. The findings indicate a possible link between effective communication of company information and the creation of competitive advantage.*

Key words: *Global Communication; Managerial Communication, Semiotics, Digital Communication*

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1. Introduction

Within the framework of Global Strategic Management, we define Global Managerial Communication as *an integrative theory-practice methodology that enables management to sensibly apply the knowledge acquired to any situation, within the perspective of business communication.* In other words, it is the process that interconnects knowledge with competent practice (Ting-Toomey, 1999). Furthermore, Global Managerial Communication can be interpreted as *the skill to efficiently communicate activities/messages to stimulate an anticipated reaction in a specific situation and without offending anyone in the process on a global level.* Specifically, competent management needs to master the art of interaction and apply it efficiently to the people and the environment, and at the same time, fulfil its own communication goals using this capability (Chen and Starosta, 1998, p. 241-2).

Given the hyper evolution of ICT's (Information and Communication Technologies) communicative activities (verbal, written and visual) - communicating information digitally with internal and external stakeholders demands careful planning and execution, regardless of the industry or the level of communication. Current communication requires much more than writing, speaking, visually presenting - whether personally (directly) or impersonally (through media such as digital platforms) - it demands that great communicators also make effective use of semiotics in the integrative process. According to Porter & Millar (1985), advances in information technology and how we disseminate information affects competition and the sources of competitive advantage (Porter and Millar, 1985). Thus, communicating important information effectively via use of technology in today's digital economy can have a direct effect on creating and sustaining competitive advantage. To underscore the importance of effective communication, we use the analogy of military training which postulates that effective communication is a vital component to survival, especially in the management of multinational forces: *"Having clear lines of communication throughout the multinational task force opens the door for collaboration among all partners and develops a strong, cohesive, allied force. The effective communication that is established in the planning stage has a positive effect on every aspect of the future operation, not just logistics, and ultimately plays a vital role in the success or failure of the entire operation"* (Christie, 2015).

Within this context and to strengthen our study, we introduce and explain semiotics as the study of signs and the interrelationship with its three main branches: Semantics - relation between signs and the things to which they refer; Syntactics - relations among signs in formal structures; and Pragmatics - relation between signs and the effects they have on the people who use them. Semiotics involves the study of signs as we know in everyday speech, but also the study of anything which *stands for* something different. In today's semiotic sense, signs convert into words, images, sounds, gestures, and objects almost entirely in digital form. There are tens of semiotics subfields; however, the most relevant to the concept of Global Managerial Communication is Organizational Semiotics (Gazendam *et al.*, 2003). Organizational Semiotics originated in the language action perspective and emphasizes actions and interactions between individuals or groups. Individuals act on behalf of an organization. In such a case, the manager-employee is an agent of the organization who exchanges and disseminates information. In fact, organizations are constituted and maintained through communication. Information systems are organizational sign objects with action capabilities built through design. These systems usually concentrate on the plotting of communicative actions between people within organizations and between organizations involved in communicative actions (Liu *et al.*, 2002).

The status-quo of the global business environment is characterized by an eruption in information technology, globalization of economies and market places, reoccurring economic crises, and increased pressure from consumers, organized labor, unstable governments, increasing government regulations, and the effect of the world's political and economic conflicts. It is clear that communicating freely, confidentially, effectively, and ethically in the digital world becomes challenging. As a result, managers often choose *silence* over communication, frequently

characterized by *leadership by avoidance* in the hope that bad things will just go away. Instead, problems only escalate the majority of times. Effective managers are catalysts for creating a positive or negative image of the organization, both within the company and in the community/society at large. Therefore, considering that global corporations nowadays have the propensity to become bigger and more powerful, there is a need for managers to communicate confidentially, ethically, and in a socially-responsible manner. Published literature shows a dynamic interest by scholars on the importance of socially-responsible communication. Social scientists are also dynamically engaging in the much-discussed topic of "micro aggression in managerial communication", ethics in communication (Makau, 2009), and protection of confidential data, especially during the digital dissemination process.

In a broad sense, the true meaning of Global Managerial Communication today may be even misinterpreted and confusing. There are many fields of communication being studied; however, there seems to be a consensus that managerial communication is an integral component of many business-related disciplines (strategic management, leadership, strategic marketing, international negotiation, business ethics, etc.). Also, within the framework of Global Managerial Communication, the topic of cross-cultural communication is at the core of the discussion as it encompasses every area of communication including interpersonal communication (Lustig and Koester, 2010). Literature reveals that cross-cultural communication within the global business context is under-researched. The topic has even inspired the interest of UNESCO (United Nations Education Scientific and Cultural Organization) who has been running a multilingual program called Transcultural Communication in the Digital Age (UNESCO, 2010). Its scope is to strengthen research in the field of multilingual and transcultural communication including multilingual computing methods, e-learning, multilingual web content management, and related methods. The end-goal is to promote the development of a multilingual social web, harnessing semantic web technologies and strengthening transcultural communication patterns using a wide range of language resources and technologies, and multilingual computing methods, multilingual e-learning and cultural diversity management procedures (UNESCO, 2010).

In this paper, and within the global business management context, we bring Managerial Communication under the broad umbrella of Business Communication. We attempt to provide an explanation by asserting that one of the most significant attributes to global managerial success is *effective managerial communication*, especially when applied digitally and through digital platforms in public domains. In an attempt to exploit the true meaning of managerial communication, we theorize that when humans interact they create relationships. We base our theories and applications on a polycentric approach by thinking of *communication* as being polycentric or even universal in nature rather than ethnocentric based.

Because humans are different in nature, they naturally act and react differently and communicate differently. Through the use of ITC platforms, we actively interact and attempt to adapt and learn the rules of our surroundings which condition the interaction, whether it is in the workplace, in public, or at a place of entertainment or sport such as a golf course. By interacting, we acquire each other's culture and integrate our exchanged behavior, knowledge, experience, and so forth - thus becoming multicultural. Consequently, we adapt to the way we interact and communicate, and according to each given situation. What makes the preceding concerns more challenging is the way we communicate in the age of the digital economy. Hence, when adaptation is not possible, such as not using the same interactive language or device or platform or even the same philosophical way of expression, we fail. A typical example is tweeting as a means of a fast way of disseminating information, yet explicitly dangerous in the sense that when a message is posted in the public domain, both its meaning and the cause and effect can become irreversible and will remain in that domain forever. As a result, the stakeholders will face serious challenges in dealing with the consequences, especially the negative ones.

Indeed, failure caused by ineffective communication in the global arena can have a significant negative effect on a firm. It can be conducive to lower productivity, lower profitability, and short-term survivorship. Increased managerial communication effectiveness, on the other hand, can

positively contribute to the overall success of the firm and, to a certain extent, contribute to gaining competitive advantage. However, in order to achieve effective communication, a firm must have well-defined communication policies and plans in place. Communication policies are designed to enable a member of an organization to understand the importance of internal communication with employees and external communication with business associates (Stevens, 2005). Through appropriate training and effective policy implementation, companies aim to develop communication skills, which can be applied to all levels of the managerial organization. A challenge global managers face today, is effective communication with global-virtual teams who communicate through Computer-Mediated Communication (CMC) means (Golden, 2006; Hunsaker and Hunsaker, 2008; CAHRS, 2010). However, reiterating the earlier statement, communication policies and plans can only be successfully developed and implemented through continuous training by using new and more efficient support tools such as developing communication technologies and by having effective communication leadership with sustained perseverance to meet the firm's objectives.

To support this objective, certain fundamental elements are necessary. Management must have the ability to manage and deliver what it promises, and must possess a high level of communication competence - including but not limited to: technological communication skills, language proficiency, cross-cultural awareness, intelligence, expertise, adaptability, and understanding (Cushner and Brislin, 1996; Earley and Ang, 2003; Arasaratnam and Doerfel, 2005; Abbe *et al.*, 2007).

2. Background

2.1 Meaning of Global Managerial Communication

Academically, global managerial communication, within the framework of applied business communication, is considered a discipline (Gross, 2011), a research topic in the field of social sciences (Calhoun, 2011), and is now taught in business schools around the globe. Strategic communication is instructed as a foundational management competence instrumental in amplifying general performance at personal, company, financial, and strategic levels. It is applied to key managerial fields of study, which include crisis management, multicultural leadership, ethical communication, informational vs. persuasional leadership, and team building, amongst others.

Since the early 1980s, management scholars have been engaged in researching and determining a clear definition of Global Managerial Communication. In 1986, Henderson proposed *A Conceptual Explication and Model for Guiding Future Research* (1986). Since then, many definitions have emerged. To a certain extent, Global Managerial Communication today can be defined as *the communication between manager, subordinates, and other stakeholders within and outside the firm in the global business landscape*. In the actual sense, it includes external stakeholders such as customers, suppliers, and even legislative representatives (Ellis & Hopkinson, 2010). However, Global Managerial Communication is considered an applied and essential discipline that continues to engage scholars in research, and has become one of the most important elements of concern within the context of global management in the digital economy.

The goal of communication within the global business context is comprehensive in that it intends to develop and disseminate relevant knowledge, which will increase the effectiveness and efficiency of managers and employees in the contemporary multicultural and diverse - global business environment. The literature shows that global managerial - and to a certain extent cross-cultural communication - is still in the developmental stage today. The hope, however, is to integrate it within the area of managerial communication, which has already expanded beyond the perimeter of the global organization. Usually, it involves the interaction between two or more diverse individuals who must communicate in a business situation, whether it is manager to employee (M2E), business to business (B2B), business to customer/guest (B2CG), or in a "non-

verbal" and "impersonal setting" such as social media, across the globe (MIT, 2009; Monash University, 2010; Cornell University, 2011). The literature shows that good communication practices in the global working environment are developed over time through experience, education, and understanding. Too often, miscommunication between culturally and linguistically different individuals can lead to unnecessary and avoidable conflicts. It is important, therefore, that firms not only have communication training and manuals at their disposal, but also that they master the art of *effective global managerial communication*. To highlight the importance of effective global communication, the U.S. Department of State recommends that diplomats and their staff become culturally educated when working on foreign assignments (Department of State, 2016).

2.2 Application of Global Managerial Communication

To illustrate the understanding of the application of Global Managerial Communication, we use a brief hypothetical scenario.

In a simulation training exercise, a message sender could easily predict how others will perceive his or her message. In such a world, television commercials would be optimally placed, and no one would be offended by an inter-office email. In such a world, there would be no language barriers, no political, religious, gender, or cultural constraints. Unfortunately, the business world does not deal with such utopias, and consequently, business leaders must be organized and prepared with well-formulated communication policies in place to avoid possible pitfalls. This becomes extremely important and challenging when operating in the global market place.

Communicating strategically involves several basic elements: Purpose, Message Sender (Encoder), Message Configuration, Message Receiver (Decoder), Channel of Communication, and Expected Outcome. When properly applied, communication should be an easy task to accomplish. However, all too frequently, we hear that a company's major hurdle to success is communication. More specifically, a company has failed to properly communicate an important message such as a press-release.

Consequently, talented managers with expertise in their field often fail in their duties simply because they lack the ability to communicate effectively. Many strategic plans may never be implemented if there is lack of communication ability (Thatam, 2008). Having a well-defined policy is, therefore, key. Such a policy will have a goal in mind: to communicate a request, an idea, accomplishment, event, or a failure. In other words, effective communication is neither a function of trial and error nor is it a matter of doing what comes naturally. Effectiveness in global managerial communication requires managers to establish clear goals and then apply principles and insights to make wise choices about language and behavior in the communication process.

2.3 Development of the Managerial Communication Competence

Although communication may, at first glance, appear simple and uncomplicated, it is in fact a complex undertaking. Effective communication requires training and development. Often, organizations do not invest sufficient money, time, and effort in developing effective communication skills, which, in turn, results in communication failure.

Many researchers have placed communication competence at the very core of managerial success. Reflecting on the qualities that underpin managerial success, Maxwell (2002) ranks the manager's ability to communicate efficiently first in importance, with a rating of 38% (p. 101). It is notable that Maxwell gives other components a markedly lower grade: creativity - 31%, management knowledge - 19%, relationships - 12% (2002). In turn, Drucker (1977) urges managers to improve their communicative competence so that they may be noted for their "ability to communicate with people and to introduce to them their own thoughts and ideas in such a way as to get them to understand and be persuaded". Furthermore, "this ability to express oneself may be the most important aptitude one can have" (Drucker, 1977, p. 262).

A manager's ability to constantly improve his/her communication skills is fundamental to the operation of any company. In the process, the true understanding of *managerial communication* and its application becomes most critical for any manager. The result is a positive-communicative aptitude that fosters a climate of open-mindedness and trust, and repels conflict and tension. Additionally, the ability to convey unpleasant news or information with diplomacy, to divert conflict tactfully, and to solve problems with authority is a key aspect of effective communication.

Published literature shows that, too often, communication by managers fails because of lack of proper training, lack of follow-up and follow- through, and lack of consequence for those who do not perceive the communication to be relevant or important. Accordingly, managers often abdicate the responsibility for communicating effectively with their internal communication department, and lack the confidence to facilitate discussion within their teams. Communication is far from simple, and experienced communicators recognize, therefore, the need to be persistent until their messages have been clearly received, understood, and dealt with accordingly. The results of an investigation into persistent and redundant communication revealed that clarity in messaging was not the goal for redundant communication (Girard, 2011). Even if a powerful manager is clear and direct with an employee-team member, it is still the redundancy that counts in order to get the core of the message delivered as intended.

Strategic communication, policy-making, and guidance for consistent information activity, both internally and externally, are of increased interest to researchers. It is key that sensitive information be safeguarded effectively. For example, computer hackers are now able to use social media to gain competitive advantage. WikiLeaks (Johnson, 2011) provides a vivid example of a seemingly weaker social media stakeholder empowered to compel concessions from an apparently stronger adversary (Castells, 2007). Certainly, companies ignore the power of social media within the context of communication at their peril. Top management, however, should be rather concerned that leaks can be detrimental to any company, and therefore the need to be prepared should be a priority.

2.4 The Role of Information Technology in Contemporary Communication Practice

Advances in information technology are allowing organizations to: (1) distribute information at increased rates of speed; (2) make more information available than ever before; (3) allow broader and more immediate access to this information; (4) encourage participation in the sharing and use of information; and (5) integrate systems and functions in unprecedented ways.

The political tumult since 2011 in the Middle East has illustrated the key role of social media. Similarly, global corporations are using social media to disseminate all kinds of information, whether marketing or human resources related (Shah *et al*., 2005). The most popular social media outlets such as Facebook, Twitter, and LinkedIn are being used to communicate with individuals internally and externally across the globe.

Although using social media to communicate can be challenging, executives often use it effectively to stay in touch with all concerned in a timely and effective fashion (Lenhart and Fox, 2006). Consider: Oracle's CEO Jonathan Benoit, http://blogs.oracle.com/jonathan (Oracle, 2011); Bill Marriott Chairman and CEO of Marriott International http://www.blogs.marriott.com/; and John Mackey Whole Foods CEO http://www2.wholefoodsmarket.com/blogs/jmackey/ all use internal and external blogs. The phenomenon delivers measurable benefits to all stakeholders (Drezner and Farrell, 2004). Internal blogs can, for example, facilitate the collation of workplace data. This information can be used to aid performance evaluations and many other applications. Data collected on external parties such as guests/customers can be used in the application of competitive analytics, Customer Relations Management (CRM), Customer Experience Management (CEM), and other marketing related applications. With unparalleled access to stakeholders, IT communication must avoid any breach of privacy and unlawful collection of personal information.

2.5 *The Importance of Semiotics in Current Digital Communication*

As explained earlier in the introduction section, *semiotics is the science of communication and sign systems*. It is the *how* people understand everyday phenomena and organize them mentally, and *how* they devise means for transmitting that understanding and sharing it with others. All natural and artificial languages are, therefore, central to semiotics and encompass all non-verbal communicative dimensions: knowledge, meaning, intention, and action are thus fundamental concepts in the semiotics sense. Major areas that include semiotics today are literature, environmental and social structures, visual arts, ritual, myth, and gestures. In business disciplines, a major area that includes overwhelming semiotics communication is marketing. Accordingly, semiotics is an interdisciplinary science whose phenomena continues to inspire the interest of researchers and practitioners across disciplines and industries.

2.6 *New Developments in the Current "Politically Correct" World of Communication*

With the evolution of social media, there has been an increased interest by people in launching blogs, becoming members of online platforms that profile business people, and having personal websites as a tool for personal branding. This evolution has allowed business people to be positively exposed yet also criticized. Accordingly, anything said can be voice or video recorded, and can be used against the person being put in the spotlight. Therefore, communicating ethically in this ever-increasing interconnected and overexposed world has become one the most feared factors for many managers. This is more evident in the political arena across democratically-developed countries, especially during election time. Managers that support candidates may be subject to extensive scrutiny, shame, accusation, and even retaliation for expressing support for candidates of the opposing party.

In 2007, Alex Brigham, an expert in the field of ethics and compliance, founded the Ethisphere Institute with a website and magazine. Its scope is to explore, examine, and circulate best practices through Ethisphere's proprietary research and rating system (Ethisphere, 2015). The Institute publishes a yearly report ranking the 100 most ethical global companies, 100 most influential - ethical business people, and a report on lawyers that matter. Ethisphere is not unique in rating and exposing the best ethical people and companies. Similarly, the Dow Jones Sustainability Indices publishes a yearly review of the most globally sustainable companies (DJ, 2015). A company that is publicly traded having a low DJ sustainability index score may not be attractive to investors; therefore, the manager must make any effort in ensuring that the index score is high. How the manager communicates this strategic goal and inspires all stakeholders to buy into it becomes a highly ethical and challenging task. In addition, the various international accreditations granted by ISO (International Organization for Standardization) based in Switzerland (ISO, 2016) demonstrates the adherence to and compliance with specific standards of member companies across industries and across the globe. An example is the *Information Security Management Systems* (ISMS). It is a certification for a systematic approach to managing sensitive company information so that it remains secure. It includes people, processes, and IT systems by applying a risk management process. It can help small, medium, and large businesses in any sector keep information assets secure. ISMS is especially helpful during dissemination of information in the Global Managerial Communication process (ISO, 2016).

This is to demonstrate that businesses and business leaders around the world are being watched, closely evaluated, and criticized (whether negatively of positively) around the clock. Therefore, the global business landscape has and continues to transition into a new era of self-policing and carefully dealing in all business related endeavors in order to stay politically-correct and business-viable. Accordingly, the way managers communicate, what they communicate, and how they use communication has become an integral component of business strategy and in striving to achieve competitive advantage. As a result, companies and management are compelled not only to participate but also anticipate and prevent what could be detrimental to the company's future

success. By saying even one wrong word, not only the going concern of the business may be in jeopardy but also the livelihood of all stakeholders involved could change forever. In sum, considering that we now live in the era of hi-tech evolution with no point of return, communicating in the best ethical way will be one of the most important key success factors for business managers and the companies they work with.

2.7 *Use of Effective Communication to Create Competitive Advantage*

In researching about competitive advantage, two major questions come to mind: Why are some competitors more successful than others? Why do some executives consistently make the right decisions while others invariably fail? Studies in the field of managerial communication reveal that failure to effectively communicate leads to lower productivity, lower profitability, and short-term survivorship. In response to continuous failure, Fortune 500 companies have been hiring experts in the field of corporate communication in order to gain competitive advantage. A global search for job opportunities in *corporate communication* revealed that most job descriptions include some common themes: "identifying, anticipating, and prioritizing communication needs; providing strategic insight and direction for organizational communication within the organization; developing a concerted stakeholder engagement effort, especially among business leaders - complete with metrics and alignment with the company's *change management* program; partnering with the company's leadership team at a strategic level - coaching and counselling them; influencing leadership thinking in communication outreach; developing executive communication strategies for members of the company's leadership team; leading, developing, and executing internal organizational and employee communication programs to engage employees and heighten their level of commitment to the new operating model's goals and objectives; and managing issues and crisis situations that may arise, in coordination with senior management" (Johnson & Johnson, 2011).

Even the most talented managers, who attempt to lead an organization without effective communication - especially without the concept of managerial communication, will ultimately fail while their more communicatively-astute counterparts succeed. In response to companies' demand for improved communication, institutions are now incorporating new disciplines into executive training on the topic of communication. One such discipline is *Emotional Intelligence* (EI) to improve communication (UC Berkeley, 2015). Through the concept of EI, managers can reflect on their own behaviour in order to improve their communication, thus acting ethically and successfully. Key components/ factors in such executive training include:

• Reading own emotional state and understanding how it affects the ability to improve interactions with co-workers and management.
• Interpreting co-workers' emotions and the situations that could result in different emotions, feelings, and moods.
• Comprehending the importance of effective co-worker relationships that consider all parties' emotions.
• Understanding the positive and negative impacts that emotions can have on management and leadership.

3. Methodology of the Study

In support of the criticality of global managerial communication discussed earlier in the paper, we present and discuss the findings of a qualitative study on the topic of communication in general. The study uses philosophical and ethnographic research methodology to investigate and assess the status-quo of contemporary managerial communication policy implementation within firms. The study applies qualitative methodology using interpretative techniques to analyze the non-intrusive collection of demographic and internal and external communication data through verbal (over the

phone), or digitally (over email exchange) inquiry. In order to make the study feasible due to time and resources constraints, we determined to collect this data from the top 100 companies listed in the 2014 Fortune 500 directory (Fortune, 2014). This convenience sample of companies is ranked by Fortune Magazine. The methodology used for the ranking takes into account several key variables that determines, in Fortune's view, the companies' overall success. Key variables include, but are not limited to: revenues, profits, earning per share, return on investment, return on equity, market capitalization, number of employees, market shares, and so forth. Quantitative data is extrapolated mainly from the 10-K filings and compared to industry standards.

Our methodology uses the techniques of coding-and-frequency and trend-and-pattern analysis to analyze the published data. Coding is an analytical process in which data is categorized to facilitate the detailed analysis of critical variables which have variety, richness, and individual character. Coding is also used to distinguish between a set of variables followed by an additional in-depth interpretive coding in which more specific trends and patterns can be interpreted. Thus, coding allows for summarizing the prevalence and relevance of codes, and discussing similarities and differences among them. In addition, it uses recursive abstraction, a methodology where datasets are summarized. Those summaries are then further summarized until a sub-set of useful data is obtained (Denzin and Lincoln, 2005; Loseke and Cahil, 2007; Holliday, 2007).

Data Collection

Data from previous studies was extrapolated principally from published scholarly literature and partially from practitioners' trade literature. The qualitative data was obtained from semi-structured phone interviews and via email exchange with participants. Information was assessed accurately and consistently by asking all subjects the same questions and from referring to company websites. Like personal interviews, telephone interviews enable a researcher to gather information rapidly, and allow for personal contact between the interviewer and the respondent. During the interview, participants also had the opportunity to answer open-ended questions that allowed them to contribute their personal point of view.

About 100 firms representing America's largest and most successful corporations listed in the 2014 Fortune 500 directory were selected and contacted via email and by phone to participate in the study (FORTUNE, 2014). The researchers selected companies based on their success as ranked by Fortune. We assumed that the ranking infers competitive advantage, and that *communication* in general, including internal and external communication as well as strategic marketing through Computer-Mediated Communication and Social Media Platform Mediated Communication, may be an integral part of their strategic planning and success. It was determined that a convenience sample of 100 firms was appropriate for this exploratory study. We aimed to have at least 50 participants. However, from the convenience sample, only 27 representatives agreed to participate, which represents 27% of the target population. For a focused study like this, a sample of 27 participants is sufficient to extrapolate useful data and sufficient enough to reach saturation. Participants were asked a set of questions that included whether their company had a communication policy in place, the policy content, and to what extent the policy was implemented - for example, at the corporate level or at other levels of the organization chart; whether a communication plan was effectively implemented; and if they had information they could freely provide.

4. Results

4.1 Summary from Published Literature

The synthesis of the findings from published literature revealed that firms across industries cannot neglect the importance of a well-formulated and implemented global communication policy when operating in this century of high-tech evolution. A well-executed communication policy has a direct correlation with a company's success and to the creation of competitive advantage.

Furthermore, the implementation of a global managerial communication plan allows for maximum efficiency of information dissemination as well as the protection of confidential and highly sensitive data, which is vital to maintaining advantage over a competitor. Also of key importance is the methodology in which data is disseminated, and the degree of confidentiality as to who should receive the information and what to do with it. For example, using company blogs, social media platforms, Intranet, Internet mail, written internal memorandum, and so forth. Table 1 shows the factors a firm should consider in the formulation of a global managerial communication plan identified in an earlier study on Managerial Communication for an industry specific investigation (Camillo and Di Pietro, 2011; Camillo and Camillo, 2015).

Tab. 1: Factors a firm should consider in the formulation of a managerial communication plan

Factors (not rank specific)
• Good communication skills and proper etiquette by managers are essential
• The value of learning about culture and cultures
• Effectively practicing Global Managerial Communication
• Having a communication plan in place
• Defining the scope and the goal of the plan
• Deciding on the critical components of the communication plan
• Who should be in charge of disseminating what information
• Who should receive the information
• What should the content of the information include
• The criticality of the timing on when information should be released
• What methodology should be used to relay the information
• Determining how to store, track, retrieve, and, if necessary, delete the disseminated information
• Planning for unintended consequences and how to deal with them
• Implementing an effective control mechanism that can monitor all company information to avoid distortion, tampering, and manipulation of the original information by intruders
• Clear the Global Managerial Communication initiative with legal department before implementing the final plan

Source: constructed according to the authors' own interpretation

Once the factors to be considered in the formulation of a communication plan have been identified, logistics of the critical components must be developed (see Table 2).

Tab. 2: Critical components and logistics of a communication plan

Who is responsible for the plan and dissemination of information?	What should the plan include?	When should the plan be implemented?	How should the plan be developed?	Where – through which channel should the information be disseminated?	Who are the stakeholders?
Management-appointed spokesperson	Policy and plan type of communication: internal-external, how much and level of confidentiality	At inception or by timely adoption, specific timing, frequency, ongoing	Self-developed, hiring an expert, adoption from parent company, research	At specified location, either with public access or private, at all designated physical locations and in cyber space, directly via memo, email, presentation, or indirectly accessible on Intranet, website, or personal by relaying to others in person, or in writing - electronically, voice and video recording, or by other means such as witness observation and taking notes	All management, employees and customers, all persons as appointed by management

Source: constructed according to the authors' own interpretation

Regardless of prevailing managerial communication debates, published literature and dangerous events (including that of the WikiLeaks release of sensitive U.S. Department of Defence

documents) (Johnson, 2011) offer compelling evidence that not only is there a need for companies to implement an effective communication policy supported by a dynamically updated training plan, but there is also a need to formulate a policy that is effective in protecting confidential data.

4.2 Summary from Structured Interviews

Data obtained from the structured interviews was transcribed, coded, and analyzed for frequency and pattern. Results were synthesized by applying recursive abstraction, then summarized, tabulated, and presented below. The first questions participants were asked was: *Does your company have a communication department?* If yes, *does it have a communication policy in place? What are the most important factors included in your communication policy*? *Does your policy cover internal and external communication?* Please provide an example of what your internal and external communication policy, e.g. a meeting (internal) or a press release (external), includes? Additionally, we asked confirmatory questions related to demographics since most of the information about the companies is publicly and readily available on the 10-K annual filing and on the companies' websites. About 12 of the 27 participants confirmed their companies had a communication policy in place which represents about 44.5%. Others stated they either did not know or they could not discuss it.

Table 3 lists the most essential elements participants believed a firm should consider in policy creation.

Tab. 3: Essential elements to consider when creating a communication policy

Essential Elements of Communication
1.   Purpose (what is the reason for a specific communication?)
2.   Message Sender (Encoder) (who is the spoke's person?)
3.   Message Configuration (timing, content, level of confidentiality)
4.   Message Receiver (Decoder) (who is the audience?)
5.   Channel of Communication (electronic, type-written, in person)
6.   Expected Outcome (what are the consequences? In other words, why are we communicating?)

Source: constructed according to the authors' own interpretation

Communication policies require efficient, practical, and compelled adherence by all stakeholders. Not only must everything be recorded at any time for any given situation, but the rules must be followed without exception. Table 4 shows the outline of an actual meeting agenda that highlights the importance of producing a record about anything concerning an important company meeting. In this scenario, a financial matter is discussed. A lot is at stake before the final financial results can be communicated to all stakeholders: the company stock value, the effect the financial performance results will have on customers, employees, and business associates outside the company (in order to protect the identity of the company and the identity of the meeting participants, the names have been omitted).

Tab. 4: Sample communication meeting schedule regarding quarterly performance results

Q1-Quarterly Meeting – North American Division
• **Purpose:** quarterly performance results and strategic planning review
• **Date and Time:** April 16th, 20xx
• **Venue:** Head Office Executive Boardroom
• **Present:** VP Finance, Divisional Managers
• **Participants Excused:** (List all absentees)
• **In attendance:** (List all attendees)
• **Agenda items**:
1. Approval of previous meeting minutes
2. Discussion of matters pending or arising from previous meeting
3. Discussion of agenda items in order of priority:
a) As planned by the meeting chair
b) As submitted by meeting attendees
c) As submitted by absentees
d) Items from the Board of Directors, Shareholders, other Executives/Stakeholders
4. Financial performance review
5. Sales and Marketing Strategies feedback
6. New business development
7. Divisional activities at regional and Strategic Business Unit (SBU) level
8. Production - inventory - backlog, etc…
9. Logistics and distribution
10. Quality Assurance Report
11. New projects - R&D report
12. Ethics report
13. CSR (Corporate Social Responsibility) report
14. Human Resources issues
15. Union issues (if applicable)
16. Communication and Media Relations report
17. Other business issues
18. Date of next meeting and deadline for submitting new agenda items
19. Time meeting was adjourned
20. Signed: Minutes taken by…

Source: constructed according to the authors' own interpretation.

Participants indicated several internal factors that are critical to management in the formulation and implementation of a communication policy and plan (see Table 5). The results in Table 5 concur with the industry-specific factors determined in the previous study. See Table 1.

Tab. 5: Factors a firm should consider in the formulation of a managerial communications policy

Factors
• Management responsible for the policy must possess good communication skills
• Effective practice of managerial communication
• Understand the demographics of the stakeholders: different cultures and beliefs, diversity…
• Understand for whom the policy is being developed: employees, customers…
• Demonstrate good ethics
• Must have an effective and well-formulated communication policy and plan in place
• Decide who should be in charge of developing and implementing the policy and plan
• Define the scope and the goal of the policy and plan
• Determine what the policy and plan should include
• Decide who should be in charge of disseminating what information
• Determine who the stakeholders are
• When the information should be disseminated
• What the information is about and what information should be included
• What channel of communication should be used
• How should the information be filed, stored, tracked, retrieved, classified, or deleted
• Have a contingency plan for unexpected responses or action against the firm
• Have an effective monitoring system in place for accurate feedback and corrective action if necessary
• Prepare to counter negative criticism and take action for "Damage Control"
• Always consult with the legal representative before implementing a policy, a plan, or before responding to negative criticism or action by stakeholders

Source: constructed according to the authors' own interpretation

4.3 Use of semiotics

Although most companies' top managers and low-level managers communicate and interact mainly digitally via electronic communication devices such as tablets, smartphones, desktops, or proprietary intranet communication devises or platforms, they do not have a framework of reference for the use of signs in communication. Generally they use signs which are preprogramed in smartphones also known as "emoticons" or derivate signs typed so as to resemble emoticons. However, we could not determine whether these companies fully integrate use of signs in communication, besides the obvious signs within the building which communicate emergency, directions, any type of information not relevant to a two-way communication as it is intended in managerial communication.

5. Summary of the Results

In this era of explosive global technological advances, managers must understand the complexity of global managerial communication, and must decide to what extent a communication policy should be implemented. For a global company, there is a need to implement or change and adapt the communication policy to reflect the changing diversity of the home country and the local culture of the host country's nationals. Hence, education and continuous training programs have to be in place, especially if firms operate as multinationals or conglomerates. The findings from companies that have a communication policy in place reveal six common elements they value the most before a plan is implemented (see table 4). These elements revolve around the information that needs to be disseminated as highlighted below:

Purpose: define the purpose of the policy and determine whether messages disseminated based on this policy will be clearly understood by all stakeholders. Assess the decoder's perception about the creditability of the company and the validity of the message being sent.

Message Sender (Encoder): Encoding means translating information into a message in the form of symbols that represent ideas or concepts into the coded message that will be communicated. Encoding involves the use of specific language, types of words, graphics, visual or auditory representations. Thus, encoding translates ideas into messages that others can interpret and understand. When encoding a message, the sender decides what to transmit based on what he/she believes about the receiver's (decoder's) knowledge and assumptions, along with additional information he/she wants the receiver (decoder) to have. It is important for the sender to use symbols that are familiar to the intended receiver. The sender should always create a scenario to mentally visualize communication from the receiver's point of view (Munter, 2011).

Message Configuration: strategic formulation of the message being disseminated. What is the message? Is it negative, positive, informative, persuasive, or reinforcing? Does it raise awareness of something new or something to be concerned about? Does the message carry a further message to a sub-audience? Does the encoder require feedback? What is the level of confidentiality? Is this the right timing?

Channel of Communication: A communication channel is the means used to convey a message. Channels can be oral, written, visual, auditory, electronic, internal or external mail distribution, or via telephone. Various media such as television, websites, blogs, radio, and so forth also exist. The effectiveness of each channel fluctuates depending on the characteristics of the communication. For example, when immediate feedback is necessary, oral communication channels are more effective because any uncertainties can be corrected instantaneously. In a situation where the message must be delivered to a wider audience, other channels should be considered.

Message Receiver (Decoder): The receiver is the individual (or individuals) by whom the message is intended to be received. Once the message is received, examined, and interpreted, the decoder assigns some type of meaning to it. Successful communication takes place when the receiver correctly decodes and interprets the sender's message. The extent to which the decoder

comprehends the message will depend on several factors: familiarity with the topic, the creditability of the sender, validity of the message based on prior relationship, and trust. The receiver's interpretation of the message is influenced by his/her experiences, attitude, knowledge, skills, perception, and culture. It is, in a way, the reverse of what the encoder attempts to determine before a message is disseminated.

Expected Outcome, Feedback: These are important components of the communication process. Feedback and expected outcome are crucial in the evaluation of the effectiveness of the message. Feedback provides an opportunity for the sender to determine if the message correctly served its purpose. Did it produce the expected outcome and does corrective action need to be taken to reduce or eliminate confusion? Misunderstandings and eventual failure to ethically and effectively communicate is caused by several factors: inappropriate channel of communication, incorrect grammar, offensive language, micro aggression, ambiguous wording, miss-translation, and so forth. Regardless of the policy in place, communication within an organization can only be successful and effective if the communication process is flawlessly implemented and carried out. Ineffective communication can be averted if the organization thinks of communication as a process of continuous improvement.

The results of this qualitative investigation offer useful insights into the criticality of having a communication policy and plan in effect at all levels of the organizational chart. The section below highlights this study's findings and proposes useful recommendations for the practitioner in the field, for educators who wish to include the critical components of a managerial communication policy into their curriculum, and for graduating business majors about to join the workforce.

6. Limitations of the study

To conduct this study, a convenience sample of about 100 companies listed in the Fortune 500 directory on www.Fortune.com (FORTUNE 2014) was selected and contacted. It was determined that the sample size was appropriate for this exploratory study. We aimed to have at least 50 participants, however, only 27 representatives agreed to participate, which represents 27% of the target population. For a focused - qualitative study, a sample of 27 participants is sufficient to extrapolate useful data and reach saturation. Participants were asked a set of questions that included whether their company had a communication policy in place, the policy content, and to what extent the policy was implemented - for example, at the corporate level or at other levels of the organizational chart; whether a communication plan was effectively implemented; and if they had information they could freely provide.

There were several challenges. Ironically, as the study was about communication, the main challenge was finding the right department or person who could confirm if the company had a communication policy in place. Although several firms' representatives had agreed to participate in the interviews, eventually they were not able to due to company proprietary-confidentiality policies. Nevertheless, we were able to determine that most companies had a communication link or sub-page on their corporate website dedicated to various visitors, e.g. shareholders, employees, customers, and so forth. Usually, this was established through public relations departments. Although several attempts were made to communicate using electronic mail, scarcely any personalized reply was ever received; instead, mostly automated email responses were received. This confirms that the complexity and criticality of communication in the modern era will remain a hot topic for discussion. Company information can be received (pushed) as deemed worthy and necessary; however, it cannot be obtained (pulled) by simply contacting a communication's department or individual. Clearly, these challenges demonstrate that this is an area companies can improve upon.

7. Conclusion

An extensive review of the literature and data obtained from selected companies provided valuable information about the status-quo of contemporary communication. In sum, effective global managerial communication is a vital skill for everyone in business today, especially for managers at all levels of global companies. Great communicators have a key advantage in building managerial influence especially while starting their careers. Knowing how to communicate ethically and effectively in every business situation is not only important but critical to business success. From sensitively articulated employee feedback to persuasive announcements to customers, today's executive must be a frontline communicator. In order to master the art of global communication, the manager has to apply the following proficiencies:

- Understand the audience, its cultural diversity, how communication affects its members, and how, in turn, the firm is affected by the interpretation and future action as a response to the communicative message.
- Understand the optimal 'medium' to present information.
- Learn the best timing to deliver key messages.
- Master the art of self-editing.

Grasping the best timing for *bad news* is paramount in the business world, especially during economic downturns when employees face job loss. Knowing when to communicate forthcoming layoffs is a tricky task. With a comprehensive communication policy in place, many scenarios can be planned for - making it easier for management to deliver grave tidings. In sum, the literature indicates that effective dissemination of information can indeed contribute to the creation and sustainability of competitive advantage, especially within the field of strategic marketing communication.

This study is a subsequent study of an industry-specific one (Camillo & Di Pietro, 2011), which investigated managerial communication in the hospitality industry cross-nationally. The results of this cross-national and cross-industry study contributes to extend business research by raising awareness about the criticality of managerial communication. It illustrates the need for further study of this discipline in business schools, and provides useful insights regarding the factors and logistics needed to create and implement a communication policy and plan.

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TRACK 12

INTERNET-BASED BUSINESS TRANSFORMATION (3)

An exploratory analysis on firms' satisfaction about social media performance
FRANCESCA NEGRI, VANIA VIGOLO

An exploratory analysis on firms' satisfaction about social media performance

FRANCESCA NEGRI[*] VANIA VIGOLO[•]

Abstract

Obiettivi. *Negli ultimi anni, le imprese hanno incrementato i propri investimenti nei Social Media. Tuttavia, misurare i risultati e gli effetti di tali investimenti sulla performance aziendale non è affatto semplice. A partire da queste considerazioni, l'obiettivo di questo lavoro è triplice: da un lato, si intende ricercare quali metriche vengono utilizzate più di frequente dalle imprese per valutare l'efficacia dei Social Media; dall'altro, si intende indagare la soddisfazione delle imprese rispetto al contributo dei Social Media su diversi aspetti delle performance aziendale. Infine, si intende esplorare l'esistenza di una correlazione tra il tipo di metriche utilizzate e la soddisfazione rispetto all'utilizzo dei Social Media.*

Metodologia. *E' stato somministrato online un questionario strutturato ad un campione di imprese italiane e sono state ottenute 136 risposte valide. Attraverso delle statistiche descrittive, sono state analizzate la frequenza d'uso delle metriche e la soddisfazione delle imprese.*

Risultati. *In primo luogo, i risultati dimostrano che le metriche di attività sono le più utilizzate dalle imprese. Anche se meno di frequente, le imprese utilizzano anche metriche create ad hoc sulla base dei proprio bisogni. In secondo luogo, il contributo dei Social Media alla performance aziendale è risultato essere al di sopra delle aspettative delle imprese per quanto riguarda il supporto ad iniziative specifiche o eventi speciali, il customer care, la brand reputation e brand awareness. Tuttavia, le imprese ritengono che il contributo dei Social Media sia meno soddisfacente in termini di supporto alle vendite e alle altre funzioni aziendali. Infine, sono emerse delle correlazioni tra metriche utilizzate e soddisfazione. Per esempio, si evidenzia una correlazione tra metriche di attività e soddisfazione rispetto al contributo dei social media in termini di brand management, mentre non c'è una correlazione significativa tra tali metriche e la soddisfazione per il contributo dei social media in termini di relazioni con i clienti.*

Limiti della ricerca. *Il campione è limitato e sono necessarie ulteriori analisi per esplorare eventuali relazioni tra il tipo di metriche utilizzate e la soddisfazione delle imprese sulla performance dei Social Media.*

Implicazioni pratiche. *Le metriche ad hoc dovrebbero essere utilizzate più di frequente per comprendere appieno il contributo dei Social Media alla performance aziendale.*

Originalità del lavoro. *Questo lavoro contribuisce alla letteratura sulle Social Media metrics sottolineando che la soddisfazione delle imprese sulla performance dei Social Media varia considerabilmente a seconda dei diversi aspetti analizzati. Inoltre, evidenzia un profondo scostamento tra la vocazione dei Social Media in termini di Marketing Relazionale e il set di metriche utilizzato, evidenziando l'assenza di metriche in linea con gli obiettivi strategici.*

Parole chiave: *Social Media metrics; Facebook; Instagram; Twitter; Sistemi Informativi; Soddisfazione; Corporate Performance*

Objectives. *In the last years, firms have increased their investments in Social Media activities. However, the outcomes and the effects of such investments on corporate performance are not easy to measure. Based on these considerations, the aim on this paper is threefold: on the one hand, it intends to investigate the type of Social Media metrics most frequently used by firms; on the other, it aims to assess firms' satisfaction about the contribution of Social Media with regard to different aspects of corporate performance, including brand reputation, customer relationships, and support to other corporate functions. Finally, it intends to explore possible correlations between the type of Social Media metrics and satisfaction about the use of Social Media.*

Methodology. *A structured questionnaire was submitted online to a sample of Italian firms and a total of 136 useful responses were obtained. Descriptive statistics were used to explore the frequency of use of Social Media metrics and the perceived satisfaction of firms.*

Findings. *First, the findings show that activity metrics are the most frequently used type of metrics. Even though less frequently, some firms expressed the need to use ad hoc metrics, i.e. metrics specifically designed to meet a firms' needs. Second, the Social Media contribution to corporate performance was above firms' expectations as regards their ability to support specific initiative or special events, customer care, brand reputation and brand awareness. Finally, some correlations emerged between the type of metrics used by firms and their level of satisfaction. For example, there is a positive correlation between activity metrics and satisfaction about the contribution of social media to brand management, while there is no significant correlation between these metrics and satisfaction about the contribution of Social Media to relationship management.*

Research limits. *This research is based on a limited sample and further analyses should be conducted to explore possible relationships between the type of metrics used by firms and their satisfaction about Social Media performance.*

Practical implications. *Ad hoc metrics should be used more frequently to fully measure Social Media contribution to firms' performance.*

Originality of the study. *This study contributes to the literature about Social Media metrics by emphasizing that firms' satisfaction about Social Media performance varies considerably according to different aspects of corporate performance. Moreover, the study pointed out a deep gap between Social Media strategic vocation and audit.*

Key words: *Social Media metrics; Facebook; Instagram; Twitter; Information System; Satisfaction; Corporate Performance*

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1. Introduction

"Accuracy" is one of the Innovation Keywords pointed out in the effort to define and design the Innovation process (Baccarani and Golinelli, 2014). Companies that have a successful approach to Digital Marketing often seem to share a common characteristic: they rigorously monitor their online marketing activities to continuously improve the performance. The importance of defining an appropriate approach to measurement and improvement is such that the term "web analytics" has been developed to describe "techniques used to asses and improve the contribution of digital marketing to a business" (Chaffey and Ellis-Chadwick, 2012, p. 556). This process is composed by the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimising the web and Social Media presence of a company. Specifically, performance management intends to enhance performance by assessing appropriate measures and tools in order to evaluate and improve the efficiency and the effectiveness of an organization and its processes.

Social Media have been described as communication systems that enable their social actors to communicate along dyadic ties. In the last years, a plethora of Social Media has emerged and investments in Social Media activities have increased their share in organisations' overall media/marketing investments. However, the outcomes of such investments are not always clear and organisations sometimes struggle to successfully manage their presence on Social Media. In the words of Paniagua and Sapena (2014, p. 719) "the link between resources generated from these sites and business performance remains largely unexploited". Even though it is difficult to measure the return on investment (ROI) of Social Media (Hoffman and Fodor, 2010), the importance of investing in Social Media is not questioned. As Qualman (2013) states, "The ROI of Social Media is that in five years your company will still exist". From a managerial perspective, it is important to know if and to what extent the use of Social Media produces the desired marketing outcomes. Therefore, organisations should use Social Media metrics to measure the results of their efforts on Social Media communication. Recent studies have identified different types of Social Media Metrics, but further research is needed to understand the relationship between Social Media usage, Social Media Metrics, and organisation performance. Moreover, there are some aspects of online campaigns that can be measured (Avinash, 2009) through Key Performance Indicators (KPI) for the online world: Paid media (e.g. advertising) and Owned media (e.g. company website) are traceable, like other traditional forms of online media. But Earned media (e.g. online community posts), which represent the most effective KPI for the online context, are not so easily traceable.

Based on these considerations, the aim of this study is threefold: first, it aims to explore if and how companies are monitoring and measuring results coming from Social Media activities. Second, this study intends to investigate firms' satisfaction about the results gained through Social Media and, third, it aims to explore possible correlations between the type of Social Media metrics and firms' satisfaction about the use of Social Media.

The paper is organised as follows: first, a literature review about Social Media management and Social Media metrics is provided. After that, the methodology for the study is described, followed by the presentation of results, discussion and managerial implications. Limitations and new research opportunities are also presented.

2. Literature Review

2.1 Social Media Management and Social Media Metrics

In their well-known contribute "Demystifying Social Media", Divol et al. (2012) tried to explain why Social Media were an "enigma wrapped in a riddle for many executives". In their study, they pointed out that the first reason was the apparently nebulous nature of the phenomenon, that makes it so difficult to understand where and how conversations are going on and how to deal

with them. Such fear of the loss of control, which is underlined also by Mandelli (2012), describes an ubiquitous Social Media context, in which markets are mediated conversations, characterized by collaboration and participation by customers. Secondly, they highlighted that there were no single measure of Social Media's financial impact, and the majority of companies were facing the problem of justifying important budgets and resources in these activities, without being able to measure their precise effects on performances. Some years have passed, but this topic still remains a "hot" research area, not only for practitioners but also for academics. More recently, the literature (Kumar et al., 2016) has pointed out that Social Media has a positive and significant effect on customers' behaviour in terms of sale.

"Things that are digital are measurable, and things that are measurable invariably improve" (Hopkins and Turner, 2012, p. 205). The aim of measurement is, in fact, to quantify whether the objectives of a strategy have been achieved (Chaffey and Ellis-Chadwick, 2012). In their article, Hoffman and Fodor (2010) suggested that Social Media objectives must drive Social Media Metrics and defined "sales, cost efficiencies, product development and market research" as "obvious objectives". Using free Social Media tools and placements is more time- and cost-effective than traditional advertising, but companies must remember that Social Media Marketing is a low-cost, high-energy type of strategy. Opening an official page on Facebook is free, although it can be costly in terms of time and money to create appropriate content and respond rapidly to customer queries and so on. "Set-it-and-forget-it" is not a good Social Media Marketing strategy (Negri, 2014). Literature (Chaffey and Ellis-Chadwick, 2012) has shown the main threats of not having a performance management system, pointing out the following: poor linkage of measure with the strategic aims (or also absence of strategic goals), key data not collected, data inaccuracies, data not disseminated and analysed, absence of strategic alignment between operations and strategy, waste of time. On the other hand, companies aware of the importance of planning an audit for their Social Media strategy can refer to the four step planning process known as the "DATA Approach" (Roy, 2009): Define (the goal that the strategy is designed to aim), Assess (define budget and human resources), Track (the actual results and the link goal/results), Adjust (make fine tunings and adjustments based on results to optimize the next marketing action).

However, research still needs to be conducted to improve the understanding of why so many companies are not monitoring their Social Media Activities. Literature (Adams et al., 2000) pointed out the main barriers to set up and use of performance management systems, barriers that, in the light of our research' findings, can be clustered and integrated has follows:

• Senior management myopia: performance management, specially in the Social Media context, could be perceived as not being a priority;

• The management could prefer to reduce costs rather than improving performance and effectiveness;

• The organization could have an unclear responsibility set for delivering and improving the measurement system: that is particularly true in the Social Media sector, in which many companies entrust the Social Media marketing plan to third or external partners/agencies;

• Resourcing issue: the Web 2.0 is characterized by so much data (the so called Big data), and so little time. Lack of time, lack of resources (from human resources to technology and integrated systems) and data overload, as well the poor quality of Big Data, could represent high barriers.

• Inadequacy of metrics: traditional web analytics are not adequate to fit Social Media performance. Companies must updated their digital metrics, also considering to figure out their own ones, built up for specific company/sector/objective.

The crucial point in Social Media Management today is how to measure the return on investment (ROI) of Social Media marketing. Fisher (2009, p. 189) defines the Social Media Roi as the "Holy Grail" of Social Media: she also noticed that marketers are nowadays squeezed between admonishments to participate in the great new social wave and demands to justify the cost using conventional advertising metrics. Hoffmann and Fodor (2010, p. 41), in their well known contribute, declared "you can" measure Social Media ROI, but they also pointed out the need of a

new set of measurements that begins with tracking the customers' investments – not companies'. They suggested forgetting the traditional ROI approach, while focussing on why people use Social Media and to measure the Social Media investments customers make as they engage with companies' brands and products. In that way, the Authors were trying to highlight the long-term pay off, not just the short-term results. They called this process "turning your thinking upside down". Even if presented as not exhaustive, they also listed a relevant metrics' classification, organized by Social Media Applications (Blogs, Microblogging, Cocreation, Social Bookmarking, Forums and Discussion Boards, Product Reviews, Social Networks, Video and Photosharing) and key Social Media objectives (Brand Awarness, Brand Engagement, Word of mouth). To understand what is working and what is not, they suggested a shift from "fuzzy" measurement to quantifiable metrics, as represented in Figure 1.

Fig. 1. The shift to measurable approach
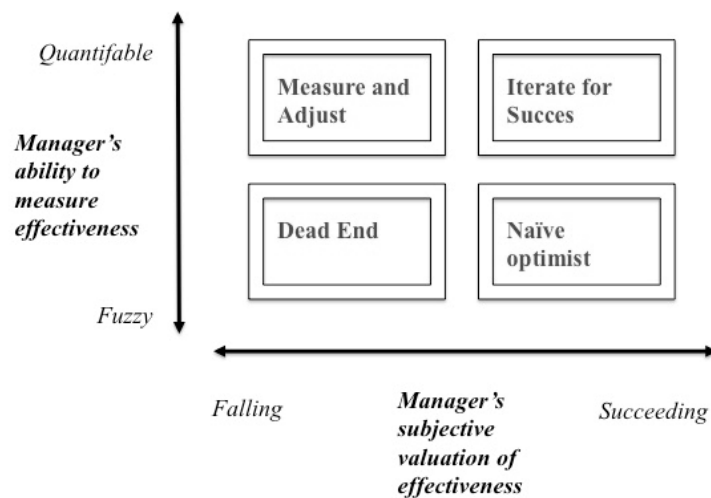
Source: Hoffman and Fodor (2010), p. 47

Peters and al. (2013, p. 281) pointed out that Social Media are deeply different from any traditional or other online media because of "their social network structure and egalitarian nature". They suggested that these differences require a different measurement approach. To develop a better Social Media Metrics approach, and looking for an appropriate dashboard, the Authors provided a tool kit consisting of three components (motives, content and network structure). They also suggested nine valuable guidelines for designing appropriate Social Media metrics and constructing a sensible Social Media dashboard. The framework is synthetized in Figure 2.

Moreover, in their study Paniagua and Sapena (2014) tried to link business performance and User Generated Content (UGC), and they studied how "followers" on Twitter and "likes" on Facebook could influence a company share price. In their findings, Twitter was found to be more powerful than Facebook. Even if the huge variety of (and still incipient new) Social Media and management objectives implies that there is no possibility to get a "silver-bullet kind of metric or metric compilation that addresses all requirements for all brands alike" (Peters and al., 2013, p. 296), many others are the efforts to find and classify new metrics for marketers' everyday life. Tuten and Solomon (2014) distinguished three different types of metrics: Activity Metrics, that measure the actions the company takes relative to Social Media (for instance, number, frequency and recency of posts); Interaction Metrics, that focus on how the target market engages with the Social Media platforms and reviews (comments, reviews, deal redemption rate) and, finally, Return Metrics, measuring the outcomes (financial or otherwise) that directly or indirectly support the success of the company. In the light of the fact that international literature has not face in depth this theme, Tuten and Solomon's (2014) model will be at the basis of our framework.

Fig. 2. Peters and al. (2013) framework
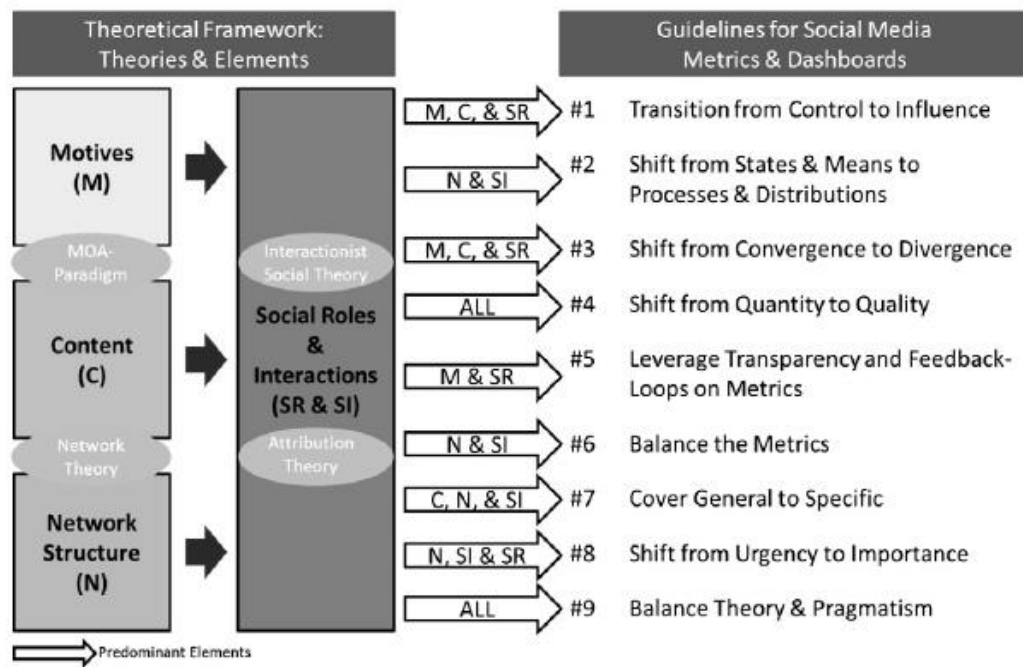
Source: Peters *et al.* (2013), p. 290

2.2 *Facebook, Instagram and Twitter Metrics*

In this section we will provide a description of which kind of analytics the major Social Networking Sites (SNSs) are offering to companies: the majority of SNSs makes control dashboards available to companies, where basic insights are offered for free, while fees are charged for more sophisticated marketing instruments. We will focus our review on Facebook, Instagram and Twitter. The focus of the literature review moves from "metrics" to "analytics" because, as shown in literature (Divol et al. 2012), the majority of the firms that are now moving their first steps into the Social Media Marketing are trying to orientate their strategies and operations in the light of the analytics provided by the major SNS (i.e. Facebook, Instgram and Twitter). This consideration will drive also our data analysis.

With "Facebook measurement tools", companies can see how people respond to their Page and adverts: the aim of the Menlo Park company is to enable media and investors to take informed decisions about how to reach their targets, to create posts for the best response or to boost contents that are not working[1].

The first tool provided by Facebook is "Page Insights", that show:
- Like insights: how many people like the Page and the number of new likes, how the number of likes changes over time and where they come from. In this section you can see the Organic/Paid Likes: Organic Likes mean that someone liked the Page because they saw that a friend liked it or found the Page in another way. With Paid Likes, it means that the Page gained likes through advertisement, by boosting a post or running another kind of advert to reach people on Facebook.
- Visits: how many people have seen the Page and the posts, and which section of the Page people are responding to most, where they are coming from – e.g. Facebook itself or a search engine such as Google. When companies manage a Page on Facebook, in fact, people can enter the business' name or other information into a search engine, and they can find you just like

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[1] Source: https://www.facebook.com/business/learn/facebook-ads-measuring-results/

any other website. In this section, the External Referrers graph shows how people find the Page from outside Facebook: this graph helps companies to understand and evaluate how a Facebook Page gives a greater online presence, because the Page, the business info added to it and all of the companies' content and posts are searchable on the web and help people to find the business.

- Reach: how many people have clicked, liked, commented on or shared the Page or posts. Companies can also see how much of that came through their customers and friends, and the responses derived from adverts. With the Total Reach graph companies can monitor the total number of unique people who saw any activity on their Page.

- Posts: companies can see a daily breakdown of their posts, and how people responded with clicks, likes and more for each type of posts they create: statuses, photos and video. Moreover, thanks to the "When your fans are online" tab, companies can get a week's view of when people who like their Page are on Facebook. By clicking on any part of the graph companies can see the number of people and the time they are online, so they can plan their posts when their audience is most likely to be active on Facebook. In the " Post Types tab", companies can see the types of posts they create (ie: offer, link, photo o status), how many people the posts reach and how they respond, to know what type of posts work best with their audience. Moreover, in the "Top Posts from Pages You Watch" tab, companies can monitor post performance from other Pages they follow, to get helpful insights from best in class, influencers or competitors.

- People: to help companies understand their audience, Facebook provides demographic information (such as age, gender and location), along with what times they are looking at the Page and how they found it.

A second tool offered by Facebook is the "Adverts Manager" section (that also exists as an App for smartphones): when companies run adverts, they can browse this section to see how they are performing, make changes or fine tunings based on performance, and get reports.

The last tool companies can use for their activities on Facebook is the "Facebook pixel", a piece of code for their website that enable companies to measure, optimise and build audiences for their advertising campaigns and social activities. By installing the Facebook pixel on their website, companies will unlock some features that help to measure cross-device conversions (see how customers are moving between devices before they convert), optimise delivery to people who are likely to take action, automatically build audiences for website visitors to retarget (create custom audiences of people who visited a product page, added to basket or purchased a product), monitor their website traffic trough their Facebook pixel dashboard.

To run ads on Instagram, companies need a Facebook Page. Like for Facebook activities above descripted, performance metrics for Instagram ads are available: Instagram ads will use the same reporting tools that Facebook ads use. Companies will be able to look at metrics at the campaign, ad set and ad levels. They will also be able to schedule reports, save reports and customize columns in Power Editor and Ads Manager so that they only see the data they care about.

Finally, Twitter analytics[2] try to help companies understand how the content they create and share on Twitter contribute to increase their business. Every Twitter accounts can find the first metrics in the account page, browsing three sections:

1. Home: is the Twitter report card, with high-level statistics tracked from month to month. It is also a gallery of companies' greatest hits: Twitter will spotlight their top-performing Tweets and introduce the companies to their main network influencers.

2. Tweets: in the "Tweet activity dashboard" companies can find metrics for every single Tweet to know exactly how many times Twitter users have seen, retweeted, favourited, and replied to each Tweet.

3. Followers: this audience insights dashboard contains valuable information about the people who follow the company on Twitter. Companies can track their follower growth over time and

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[2] Source: https://analytics.twitter.com

learn more about their followers' interests and demographics.

As for Facebook, also Twitter provides some specific dashboards and tools to monitor performances. The first one is the "Campaigns Dashboard", that allows companies to track:

- Impressions: this is how many times the ads have been seen by Twitter users.
- Results. These are the actions that are tied to companies' objectives. For instance, if the goal is to increase website visits, the results tracked will be link clicks.
- Engagement rate. This is the number of impressions for companies' ads divided by the number of results.
- Cost per result. This is how much companies are paying, on average, for each relevant action people are taking from their ads.

Companies can also set up the "Online Conversion Tracking" tool (the conversion "tag" is a few lines of Javascript, a pixel) that allows companies to understand which actions users take after coming to their website from company's Tweets/Account. In other words, companies can see exactly how their budgets contribute to specific goals, from making purchases to visiting specific product or landing pages on the website. Last, but not least, this tool enables companies to follow the audience cross-devices: if someone sees the company's Website Card on mobile and makes a purchase on its website from their desktop, the company will be able to connect the two actions to one unique customer's journey. Moreover, Twitter works with about 23 official partners specialised in ad measurement to help companies monitoring and tracking their Twitter activities.

To sum up, the major Social Media analysed provide firms with access to activity, interaction and return data to measure the effect of Social Media usage.

3. Methodology

3.1 Measures

The three different types of metrics identified by Tuten and Solomon (2014) (i.e. activity, relationship and return metrics), which correspond to the data (analytics) provided by the major SSNs, represent the core of research. Respondents were asked to rate their frequency of use of these types of Social Media metrics with a 7-point scale ranging from "never used" to "constantly use". Satisfaction about the contribution of Social Media to several aspects of corporate performance was measured with a 7-point scale ranging from "far below expectations" to "far above expectations". These items, were derived from previous studies, mainly Hoffman and Fodor (2010) and Zarrella (2010), who are among the first authors who tried to link Social Media goals and performance, matching an academic accuracy with a managerial approach. Specifically, these items regarded satisfaction about the following aspects of corporate performance: relationships with customers, brand reputation and support of social media to corporate activities.

3.2 Sampling and data collection

The data were collected through a structured questionnaire submitted online to a sample of 136 Italian companies of different industries belonging to the "Osservatorio Fedeltà", a permanent University Observer[3]. Overall, 119 valid questionnaires were obtained.

3.3 Data analysis

This paper presents the first step of a wider research. For the purpose of this specific study, descriptive statistics were used to investigate the use of Social Media metrics among the sample and

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[3]   We are especially grateful to Prof.ssa Cristina Ziliani and Dott. Marco Ieva for allowing us to have access to the dataset of the "Osservatorio Fedeltà", a Research Institution on customer loyalty within the University of Parma (Italy) which monitors loyalty programs in 30 countries from more than 20 years.

gain insights into respondents' satisfaction about the contribution of Social Media to corporate performance. In addition, correlation analyses were used to explore relationships between metrics and satisfaction.

4. Findings

4.1 Sample profile

Most of respondents (75.5 per cent) were business-to-consumer firms, including for example retailers, banks and travel agencies, while the remaining 24.5 per cent were business-to-business firms such as food and non-food manufacturers and energy utilities. The details of the sample profile are provided in Table 1.

Tab. 1: Respondents' profile

Industry	Respondents (%)
Food manufacturers	19
Non food manufacturers	16
FMCG retailing	27.6
Non food retailing	6.1
Drugstores and perfume shops	3.1
Banks, insurance and financial services	7.4
Telecommunication companies and media	3.1
Travel services	3.1
Utilities	6.7
Other	7.9

Source: Authors' elaboration

The "Osservatorio Fedeltà" survey was run on Italian managers who self-identified themselves as Marketing Managers, Commercial Directors, Chief Executive Officers and others.

4.2 Use of Social Media metrics

All companies reported to used social media even if with different intensity. However, as reported in Table 2, the findings show that more than one third of the respondents had never used any metrics to measure the outcomes of their social media usage.

Tab. 2: Use of Social Media metrics

Use of Social Media metrics	Percentage
No	35.3
Yes	64.7
Total	100.0

Source: Authors' elaboration

The findings in Table 3 show that activity metrics are the most frequently used type of Social Media metrics (mean= 5.2), followed by interaction metrics (mean= 4.9) and return metrics (4.2). Respondents do not make frequent use of *ad hoc* metrics (mean= 3.7). However, *ad hoc* metrics show the highest standard deviation value (2.5), thus suggesting a greater heterogeneity in the frequency of use by companies than the other metrics.

Tab. 3: Frequency of use of Social Media metrics

Type of metrics	Mean	Std. Deviation
Activity metrics	5.2	1.93
Interaction metrics	4.9	1.93
Return metrics	4.2	2.11
Ad hoc metrics	3.7	2.55

Source: Authors' elaboration

4.4 Satisfaction about the contribution of Social Media to corporate performance

Table 4 shows respondents' satisfaction about the use of Social Media in decreasing order.

On the one hand, companies stated that the contribution of Social Media was higher than expected (with values ranging from 5.0 to 4.8) with regard to Social Media's support to specific initiatives or special events, customer care efficacy, brand reputation and brand awareness. On the other hand, the contribution to increased quantity and quality of relations with customers, to community management and customer insights was only slightly more than expected (with values ranging from 4.5 to 4.4). Finally, the contribution of Social Media to increased sales as well as to improve efficacy and efficiency of other business functions was almost as expected (with values ranging from 4.2 to 3.9).

Tab. 4: Satisfaction about Social Media performance

Contribution of Social Media to…	Mean	Std. Deviation
Support to initiatives/special events	5.0	1.80
Increased efficacy in customer care	4.9	1.99
Creation and defense of brand reputation	4.9	1.72
Increased brand awareness	4.8	1.74
Increase in the quantity of relations with the target	4.5	1.81
Increase in the quality of relations with the target	4.5	1.84
Improved Community Management	4.4	2.30
Customer insights	4.4	1.96
Increased sales	4.2	2.10
Increased efficacy of other business functions	4.0	2.20
Increased efficiency of other business functions	3.9	2.29

Source: Authors' elaboration

4.5 Correlation between the use of Social Media metrics and satisfaction about the contribution of Social Media

To respond to the third objective of this paper, the types of Social Media metrics were correlated with firms' satisfaction about the use of Social Media. In particular, Social Media metrics were related to the dimensions of satisfaction identified in literature: relationships with customers, brand management, support to corporate activities, and overall economic performance. As reported in Table 5, activity metrics are positively correlated with brand management, interaction metrics are positively correlated with brand reputation, customer relationships and support to other functions. Return metrics are positively correlated with customer relationships and support and, finally, ad hoc metrics are positively correlated with brand management, customer relationships and support to other functions.

Tab. 5: Correlations between Social Media metrics and satisfaction

	Customers relationships	Brand reputation	Support to other functions
Activity metrics	*not significant*	0.218*	*not significant*
Interaction metrics	0.257**	0.292**	0.273**
Return metrics	0.282	*not significant*	0.229*
Ad hoc metrics	0.311**	0.263**	0.268**
*p<0.05; **p<0.01			

Source: Authors' elaboration

5. Discussion and managerial implications

A basic prerequisite for managing Social Media is their effective measurement (Peters and al., 2013). This study explored the use of Social Media Metrics among Italian firms and assessed firms' level of satisfaction with regard to Social Media contribution to corporate performance. It also identified some correlations between the types of metrics used and firm's satisfaction. First, this study contributes to extant literature by showing that respondents tend to rely simultaneously on different types of metrics to measure their Social Media performance. In particular, activity metrics are the most frequently used type of metrics, closely followed by interaction metrics. Even though ad hoc metrics are not used on a regular basis, from the results we can argue that companies are trying to find more effective ways to measure Social Media results according to the company's specific needs and activities. Second, respondents show different levels of satisfaction with regard to Social Media according to different perspectives. In particular, firms are satisfied about the contribution of Social Media to the launch of special events, to customer care and brand reputation. Hence, the findings support the study by Moretti and Tuan (2014) according to which Social Media Marketing is a part of Relationship Marketing, therefore affecting the creation of meaningful interactions with customers. However, the contribution of Social Media is not as high as expected in terms of sales and support to other business functions. With this regard, Social Media management can do much to improve companies' satisfaction with Social Media. Finally, positive correlations emerged between the types of metrics and firms' satisfaction. For example, there is a positive correlation between activity metrics and satisfaction about the contribution of social media to brand management, while there is no significant correlation between these metrics and satisfaction about the contribution of Social Media to relationship management. From this result we can argue that other types of metrics, such as interaction metrics, could be more adequate to measure the contribution of social media to the improvement of relationships with customers.

Moreover, once overtaken these barriers, companies need to start with figuring out first of all their managerial and marketing goals, and then to apply metrics accordingly. Without specific goals, Social Media Metrics are meaningless (Sterne, 2010).

Our study pointed out that companies are using a very simple set of metrics, quite close the ones offered by default by Facebook, Instagram and Twitter. As final closing, our study highlights a deep gap between the vocation of Social Media in terms of Relationship Marketing and the type of metrics used (activity in the most case). Practitioners and academics must design a new set of metrics, in line with the strategic objectives.

6. Limitations and further research

Some caution should be taken in interpreting the results of this study due to some limitations. First, this exploratory study is part of a wider research which was not focused on Social Media.

Therefore, general dimensions of Social Media metrics rather than specific items were used to obtain a broad picture about the use of social media metrics by firms and their satisfaction. Hence, future studies need to go more in detail into the analysis of the type of Social Media metrics used by firm. Second, differences in the use of Social Media metrics between different types of industries, or between B2B versus B2C firms, have not been explored. Future research should consider this aspect. Third, our research doesn't consider the specific channel used by firms: companies seem to use different metrics in different contexts, like Facebook or Instagram.

As final further research design, we could try to identify a set of more effective metrics, able to link in a better way strategy, operations and Social Media efforts.

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TRACK 13

OPPORTUNIES FOR SMES
AND FOR DIGITAL BORN BUSINESSES

'Made in Italy' enhancement: role of the external agents for the Italian SMEs digitization
LUCIA AIELLO, IANA DULSKAIA, MARIA ANTONELLA FERRI, MAURO GATTI, MARIA MENSHIKOVA, FRANCESCO ZITELLI

'Made in Italy' enhancement: role of the external agents for the Italian SMEs digitization

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Abstract

Objectives. *To analyse the digital strategies and the e-tools for "Made in Italy" promotion and the role of an external agent (digitalizator) for SMEs support.*

Methodology. *The analysis of a case study "EccellenzeInDigitale", that is an initiative promoted by Google and Unioncamere. Given the structure of "EccellenzeInDigitale", the research represents a longitudinal study aimed at assessing the digitalizator's impact on a SME digital strategy implementation. Two measurements were taken during the programme: the first at the beginning of the six-month tutoring period before any of the digitalizator's interventions, the second at the end of the six-month period.*

Findings. *The external stimulus produced by the digitalizators participated in the programme "EccellenzeInDigitale" has provided a significant impact on the digital strategies implementation and e-tools usage for the "Made in Italy" promotion. Before participating in "EccellenzeInDigitale" programme SMEs were oriented towards the website and e-mail usage, available for product development purpose in comparison with other purposes. The intervention of the digitalizators has increased significantly the share of social media marketing (SMM) and search engine marketing (SEM) tools. It is possible to argue that the "EccellenzeInDigitale" programme has increased the potential use of tools for marketing activities.*

Research limits. *There is no clear proof of a direct influence of digitalizators on observed change because of the absence of a control group for the data analysis.*

Practical implications. *The findings of this research can be used by managers and policy makers of the companies in order to enhance their presence on the global market by using e-tools for promotional purposes.*

Originality of the study. *The analysis of a new professional figure - "digitalizator" – an individual with advanced digital competences, that can be a key partner of SMEs in order to promote "Made In" production.*

Key words: *made in; promotion; digital strategies; SMEs; Made in Italy; digitization; digitalizator*

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1. Introduction

The developments of virtual environment and e-tools have put in action a closed proximity between producer and consumer, the new strategy is 'think local and act global'.

This work would analyze the role of digital strategy to support promotion of special goods: it is called "Made-In", where the role of territory and local traditions are an essential core product.

We are going to present the digital strategies for promotion of "Made-In", in particular the "Made-In-Italy". The study is inter-disciplinary because we want to present the main strategic and organizational aspects.

In strategic point, we put in evidence the role of e-tools; in organizational point we mark the virtual environment and the role of external agent to support the SMEs.

We highlight the link between strategic and organizational issues, which is very important to enhance "Made-In" promotion, as it may involve different aspects of organizational life, such as: company identity and reputation, product, internal organizational units and external consulting services.

In this paper we are attempting to find the answers to the following questions:
1. Could the presence of an external professional stimulate the application of digital tools for Made in Italy promotion by SMEs?
2. For what kinds of activities did the Italian SMEs (through the matrix tools/purposes) use digital tools before and for what ones do they use them after the intervention of digitalizator? What is the main contribution of the external agent in terms of activities, supported by digital technologies in the performance of a SME?

The lack of resources widely discussed in the literature is a factor that inhibits the introduction of technologies in the business processes of SMEs. In this study we consider the knowledge about digital tools and innovations as an essential recourse for digital strategies implementation. Thus, the role that could be performed by a "digitalizator" (a professional with the skills in the field of digital tools' usage) is to clarify to SMEs managers how e-tools can be applied for their business in order to achieve and maintain the competitive advantage.

In the second section the initiatives for "Made-In-Italy" promotion were described. In the third section the role of virtual environment and e-tools for the Made-In-Italy enhancement was discussed. In the forth section, we present the role of an external agent to support "Made-In" promotion. Finally, the work analyses a case study on the digitization of SMEs produced the specific products related to the category "Made-In-Italy".

The innovative contribute of the paper is the proposition of a new professional figure - "digitalizator" - an individual with advanced digital competences, that can be a key partner of SMEs in order to promote "Made-In" production.

The main findings of the research can be state as follows: the "digitalizator" can provide firms with the new technologies and e-tools, new digital skills and, allowing them consequently to access new markets with new potential clients interested in the authentic and genuine Italian products. The new professional profile of "digitalizator", as an external advisor/consultant, can play a key role for the "Made-In" promotion. It is also possible to sum up that the "EccellenzeInDigitale" programme helped to increase the potential use of tools for marketing activities.

2. Promotional strategies for Made-In-Italy

The process of commercial offer placement in foreign markets implies for the companies the decisions of high complexity in order to characterize the product of distinctive supporting and attributes. In this framework of analysis, the "Country of origin effect" (COO) plays a key role. The COO, in fact, evokes the condition for which the consumer gives a differential value, positive or negative, to a product or service by the mere fact of been made-in a particular country or in any case be bound to its traditions (Mainolfi, 2010). Although it is acceptable to think that foreign demand

for domestic goods is formed basically on stereotypes related to the tradition and the history of nations and brands, it is equally true that "stakeholders make judgments more and more autonomous and less stereotyped in their consumption choices. Early research on the subject of COO are made only in the sixties of the last century by the scholar Dichter (1962) he states that "[...] the little phrase" Made-In ... "can have a tremendous influence on the acceptance and success of products over and above the specific advertising techniques used by themselves, recognizing a strong influence of the effects associated with the country of origin on the level of acceptance of foreign product systems. The nationality of a product conditions how it is perceived (Gallarza *et al.*, 2002). Its national origin may be a signal of quality, perceived risk and value, as well as of the likelihood of being purchased. A product-country match occurs when important dimensions of the product category are associated with the country's image (Roth and Romeo, 1992).

It is becaming crucial to choose the strategies of promotion of the brand «Made-In» and in our particular case the brand "Made-In-Italy".

In 2015 the Ministry of Economic Development has published an article called «*Plan for the extraordinary promotion of Made in Italy and the attraction of investments in Italy*». It is said that 260 million euro were allocated from the budget for the extraordinary promotion plan for the Made-In-Italy, namely the internationalization of enterprises, especially SMEs, operating in the global market, the expansion of the Italian share of international trade and investment attraction initiatives in Italy. This is laid down the implementing decree signed by Minister of Economic Development, Federica Guidi, and announced on the website of the Ministry of Economic Development.

The key objective of the Plan is to enhance the image of Italian products in the world, to facilitate international trade of Italian businesses and attract new foreign investments in Italy. In order to reach this purpose will be implemented the following initiatives to support SMEs:
1. Providing large *national trade fairs*, to enhance both the function of the brand Made-In-Italy, and the effectiveness in business finalization;
2. Promotion plan in collaboration with the *world's major retail chains* to support the entry of Italian products without international brand;
3. Attacking strategy for the priority markets with an intensive awareness campaign and *advertising* through *traditional media and more innovative (social networks and blogs)*;
4. Single distinctive Italian agrifood sign and other interventions on the occasion like *Expo 2015*;
5. Plan for enhancement of production of excellence with wide-ranging promotional activities, especially in favor of *agricultural production and agrifood*, also for the protection of trademarks and *certification of quality and origin*;
6. Communication plan against *Italian Sounding* in synergy with associations for the protection and associations of food producers and wine DOP and IGP;
7. *Roadshow* to contribute - in cooperation with business associations and chambers of commerce - to the knowledge of the tools supporting internationalization, also providing specific training to stimulate the internationalization capability of SMEs, with particular attention to those that potentially suitable, they have not yet addressed the international competition;
8. *Training and use of Temporary Export Manager* to favor the acquisition of international managerial skills by SMEs;
9. Support to *e-commerce* to promote access to digital platforms and promote e-commerce as a new market penetration channel.

3. Digital strategies for "Made-In-Italy" enhancement

"Made-In-Italy" is a brand of great success in the world. In 2013, the searches on Google related to the Made-In-Italy products increased by 12% compared with 2012 (Google Blog Italia, 2014). Despite this fact, Italian SMEs - creators of Made-In-Italy products of great value for the consumers around the world - need to face the challenges and grasp the opportunities offered by globalisation and expansion of the markets, in which they operate, in order to disseminate and

communicate this value effectively (Bettiol, 2015). According to Eurisko data (2013) the presence of "Made-In-Italy" enterprises on the web is still minimal. Only 34% of SMEs have their own website and only 13% use it for e-commerce.

On the other hand, many recent researches highlight the opportunities offered to SMEs by the digital technologies. The report of BCG (2011) argues that the advent of the Web allowed many Italian companies to modernise the way of establishing and maintaining the relationships with partners, suppliers and customers. According to the authors activities, supported by digital technologies, could be divided in the following categories: 1) product development, 2) certification of product origin, 3) marketing, 4) sales via the Internet, 5) post-sales service:

- *Product Development*

Some researchers suggest that the interaction between organization and customer community is an essential premise for value creating through co-creation and mutual learning (Bernoff and Li, 2008). The empirical study on the role of user communities for Made-In-Italy innovation of Maria and Finotto (2008) describe insights companies can gain in terms of new ideas and feedbacks for product innovation and value creation. Finotto and Micelli (2010) show, moreover, that from the innovation studies perspective, consumers are the main partners with the key competences for product innovation. Micelli (2011) emphasizes the fact that the direct relationship with final users allows craftsmen of "Made in Italy" products to create objects (or styles of life) full of meaning and quality for people who will use them (and pay for). Bettiol (2015) argues that dialogue with the users' community is a tool for continuous improvement and maximum customization of the product offering. This dialogue can be conducted through the company web site or web 2.0 platforms. BCG (2011) confirms this statement, highlighting how collaboration between company and consumer can be supported through online surveys and participatory websites.

- *"Made-In-Italy" product certification*

Bova (2015) claims that the campaigns designed to educate and inform customers about the difference between authentic Italian and imitation Italian-sounding products are very central for this purpose. It is important to provide a message of original Italian product presentation to the consumers, opinion leaders and economic operators so they were able to recognize it (Ministry of Economic Development, 2015). According to BCG report (2011) online tracking systems on the web sites or through mobile apps play an important role to verify the authenticity, origin, and history of the products, counteracting the counterfeiting. Bova (2015) claims that the information provided by the digital technologies guides consumers to authentic, Italian-made products and helps to raise awareness of the quality and origin of authentic Italian products. The author argue that the digital campaign aimed at informing customers about the Made-In-Italy products authenticity can be conveyd through such digital tools as blog, e-newsletter, digital advertising and positioning, public relations and social media using Facebook, YouTube, Pinterest and Twitter channels to share content and engage with customers to build a community of authentic Italian products lovers.

- *Marketing*

The data on advertising investment at the global level confirm the importance of the web as a tool for marketing and communication. In Italy, the Internet Advertising grew in 2013 by 17% passing from a value of 1.53 billion € in 2012 to 1.80 billion € in 2013 (Politecnico di Milano, 2013). The web site represents the first and most immediate tool through which the company communicates itself, its brand and its products (Finotto and Micelli, 2010). The authors also highlight the contribution of consumers' community involved in the interaction with the company through the web 2.0 platforms in the renewal of values' set and brand identity. In these virtual environments consumers become active promoters of the commercial communication, amplifying its reach and its dissemination through "word-of-mouth" mechanisms, as well as creators of autonomous messages and content related to the brand (Kozinets, 2010 in Finotto and Micelli, 2010). Website, social networks, applications for mobile devices, Youtube channel, presence on third party websites (e.g. TripAdvisor), online advertising - all these tools can be used by SMEs to promote the value of the Italian product uniqueness (BCG, 2011).

- *Sales*

According to the Plan for the extraordinary promotion of Made-in-Italy (2015) e-commerce represents one of the strategies for commercial penetration to the foreign markets. A valid use of the web allows the Italian SMEs to overcome their size and localization limitations, thanks to an immediate access to global markets. BCG (2011) describes the tools useful for this purpose: own website, third party website, sectorial and not marketplace at the national and international levels.

- *Post-sales service*

BCG (2011) highlights the possibility to provide online additional services after purchase of a product, as well as to develop effective loyalty programmes in order to increase the involvement and interest of customers towards the "Made-In-Italy" products. Furthermore, according to Maria and Finotto (2008) the web can be exploited as a customer management platform for experience sharing and brand interaction. The authors claim that network technologies should be used to share online customer experiences rooted in the physical context.

Throughout the literature review previously described in this section (Bernoff and Li, 2008; Finotto, 2008; Finotto and Micelli, 2010; Kozinets, 2010; BCG, 2011; Micelli, 2011; Bettiol, 2015; Bova 2015) we have highlighted what e-tools can support marketing digital strategies and which ones are more suitable for the different steps of the "Made-In-Italy" products' development and promotion, synthetizing the main findings into Table 1:

Tab. 1: Use of the digital tools for the different purposes

	Website	E-commerce website	Web 2.0	App	SEM/SMM	E-mail/ Newsletter
Product Development	X		X			
"Made in Italy" product certification	X		X	X	X	X
Marketing	X	X	X	X	X	X
Sales		X		X		X
Post-sales service	X	X	X	X		X

Source: our elaboration

Despite the huge potential of digital technologies for the different activities described in this section of the paper, the SMEs of Made-In-Italy have still several shortcomings from the point of view of digital culture diffusion, that could be promoted and developed by the initiatives of external actors described in the next section.

4. "Digitalizator"

4.1 Digital context and opportunity/barriers

The success and survival of an enterprise require taking the digital opportunity. The opportunities digital technology are new strategies both new businesses and new strategies. Some studies - as that Harvard Business School (2015) - put in evidence the strategic role of digital tools for developing of performance's company; particularly, e-mobile, cloud computing, big data and social media. Often, the competitive advantage for companies is digital skills. To do this, the prerequisite is to have a culture to digitization, so the "e-culture" (Llopis *et al.*, 2004).

Every organization should face the "e-culture challenge" in order to be prepared for the introduction of an e-based set of internal processes and external relationships. Harshak *et al.* (2013), in turn, argue that digital capability is a cross-functional proficiency in the processes, practices, and customer connections enabled by digital media and infrastructure. The role of digital-tools is carried out from Kane *et al.* (2015). Digital tools are not only new tools but also new competitive spaces, often, the firms do not always known how to "move" in virtual space and therefore not always able

to take the opportunities, especially small as those involved by the "Made-In".

The "Made-In" involves the information exchange and the knowledge management, aspects which are facilitated from new digital technologies (Gray, 2010).

Many researchers in their studies discussed the advantages of using technology for an enterprise, considering it as a key for improving competitiveness (Batenburgand, *et al.*, 2009; Cvjetičaninand, *et al.*, 2008; Jaubert *et al.*, 2014).

For Kane *et al.* (2015) there are some factors that impact digital maturity level enhancement of firms, they are skill and resources gaps, lack of digital and communication strategy, wrong perception of technology (as an end in itself, and not ASA means for strategically outcome achievement) and inability to adapt quickly to change.

For digitalization process needs the digital agenda, it is defined from top-down process (Kane *et al.*, 2015). In this overview, the SMEs digitalization requires a support from external agents to business leaders and human resources. The support involved four digital transformations: leadership; operating model; technologies; capacities (Llopis *et al.*, 2004). The organizational level that is involved from this process is strategic vertice (management or entrepreneur), that is the enterprise's leader, who should have the ability to understand and articulate the value of digital technologies to the organization's future.

4.2 Digitalization process: external agent, the digitalizator

The digital transformation of businesses could be to implement and/or increase from SMEs to increase the level of ICT usage and to move toward a higher level of digital maturity (Bode, *et al.*, 2001; Wymer, *et al.*, 2005).

In reality, not all enterprises have ability to react and respond to changes in ICT (Harindranath *et al.*, 2008). Furth more, some enterprises are resilient to ICT development; particularly, they not have all competences and motivations to digitalization of business (Caldeira *et al.*, 2002; Pavic *et al.*, 2007), in most cases, most part of enterprises consider failure to recognize ICT's strategic potential, because not consider ICT as suited to the nature of their business (Ritchie, *et al.*, 2005; Harindranath *et al.*, 2008).

We will attempt to understand the impact of the external agents' intervention (the definitions of which vary in different contexts and under different conditions - "consultant", "intermediary", "change agent" and other) on the SMEs' digital maturity level increasing.

Who can be these agents? What is their role? What are the advantages and disadvantages of their engagement? The answers to these questions we will try to give based on the theoretical reasoning and evidences of empirical research carried out studying the implementation of new digital technologies by SMEs. Hence, who can become the connecting link (mediator) on the path to becoming more digitally mature? Some studies consider the need of SMEs for consultants (Gable, 1989; Gable, 1991; Bode, *et al.*, 2001); other researchers widely discuss intervention of change agents (de Berranger *et al.*, 2001; Rogers, 2003; Duncombe, *et al.*, 2006; Thompson, *et al.*, 2008), or give them more general definition of intermediaries (Brown, *et al.*, 2001), but they all agree that these actors play an important role in competitive digital future of small business.

According to Rogers (2003) "the change agent is the individual or organization that influences the diffusion of a particular innovation in a direction determined by the system". According to Duncombe and Molla (2006) change agents can either be internal or external; internal change agents are identified as "owners-managers and other intra-preneural forces that act as champions, advocates and leaders of change", while external change agents are "institutions or individuals that seek to influence the enterprise change process from the outside". According to Brown and Lockett (2001) intermediaries play a crucial role in the adoption of complex digital applications by SMEs. They are often trusted third parties and sufficient support for maintaining the adoption, thereby eliminating issues regarding the lack of in-house competence or additional financial costs. Rogers (2003) argues that the change agents develop a need for change, establishing relationships, diagnosing problems, creating an intention in potential adopters to consider the innovation and

consequently influencing their behavior so that the intention becomes a reality. Then change agents help to stabilize the adoption process and finally ensure that adopters can be self-reliant. Several scholars (De Berranger, *et al*., 2001; Thompson, *et al*., 2008) claim that the consultants above all could disseminate knowledge and useful information to the organization in order to facilitate the understanding that Internet technology adoption could support the achievement of various goals. Moreover, according to Thompson and Brown (2008) change agents intervention via funded initiatives are important to SMEs since it provides otherwise scarce resources, and may also mitigate risks associated with the adoption of new technologies.

Despite the large number of advantages of working with outside consultants, researchers also identified some disadvantages of their involvement to the digital transformation process of SMEs. According to Harindranath *et al*. (2008) the entrepreneurs are quit anxious in being dependent, they are generally distrustful of ICT consultants and fear being trapped by spiraling costs associated with wasteful ICT expenditure. Bode and Burn (2001) believes that external agents are not sufficiently involved in business operations and e-business strategy of individual enterprises. Consultants tend to view SMEs as one-off jobs and may consequently lack commitment to the project – "no potential for establishing a long-term relationship" (McCollum, 1999). Gable (1989, 1991) argues that the choice of a good consultant is a difficult process and requests some relevant knowledge and time. Some scholars assume that for these reasons SME owner/managers often prefer to work with consultants recommended by known contacts or with friends and family members who had the required levels of ICT expertise (Harindranath *et al*., 2008).

In coherence with this analysis, we are going to speak about the external agents' intervention in this particular framework aimed at supporting the digital transformation of SMEs, that we define "digitalizator", that is a consultant in digitalization and its support is very fundamental for complex projects required advantages for the entire community.

Ribeiro (2001) through a survey has verify that the quality in the consulting service impact evaluation of service and firms; the "digitalizator" can be a bridge to improve the effectiveness and efficiency how we can see in the case study proposed.

5. Italian SMEs digitization for Made-In-Italy promotion

5.1 Case study description

For the purposes of this research we have analyzed an initiative promoted by Google and Unioncamere (Union of Chambers of Commerce) - "EccellenzeInDigitale". This initiative involved 105 Italian graduates and 52 Chambers of Commerce in Italy during 6 months from September 2014 to March 2015. The programme is aimed at supporting Italian SMEs in the implementation of digital strategies in order to improve the competitiveness of Italian SMEs and promote "Made-In-Italy" through the potential of digital technologies (Google Blog Italia, 2014). The programme is rather new in the Italian landscape: to accelerate the adoption of digital technologies by Italian SMEs, a team of 105 "digital angels" has been trained and allocated within the network of the Chamber of Commerce. The Chamber of Commerce network is disseminated throughout the country and is a crucial player for national business development.

5.2 Methodology and data collection

The research strategy adopted for this study is survey based on structured observations (Saunders *et al*., 2012). The programme interns assess each company's digital maturity level through direct observation using a specific framework provided by programme coordinators. Given the structure of "EccellenzeInDigitale", the research represents a longitudinal study (Saunders *et al*., 2012). Two measurements were taken during the programme: the first at the beginning of the six-month tutoring period before any of the interns' interventions, the second at the end of the six-

month period. Each province team (52 teams in total) composed of two graduates collected the observations autonomously. The authors of this study received the collection of spreadsheets and aggregated them in a unique file. The data were cleaned using OpenRefine: inconsistencies, duplications and spelling errors were corrected to obtain a homogenous dataset (Verborgh and Wilde, 2013). Subsequent elaborations have been performed on the dataset to get new measures and insights that will be described in the results section.

According to the categorization introduced by BCG (2011), it is possible to divide SMEs into three categories, representing their levels of activity on the Internet: online-and-active, online, and offline. "EccellenzeInDigitale" is based on the same framework, reinforcing the 3-categories' differentiation. The framework acts as a reference to describe, map and track the evolution and improvement of any company that invests in a digital strategy. All the involved SMEs across Italy are firstly subjected to a check-up of their digital status. The programme trainees perform this initial assessment, acting as field agents surveying a sample for market analysis. The check-up consists of a checklist containing several variables, the same that BCG (2011) used in its study. Monitored variables are described exploring the structure of the source data, to increase readers' understanding. The variables can be grouped into three clusters, corresponding to the above-cited categories. The set of variables is as follows, with relative description:

- *E-mail*: the company uses an email address;
- *Website*: the company owns a website;
- *Updated-website*: the company owns a website and updates it regularly (e.g. for fashion industry: twice a year according to new collections);
- *Blog*: the company owns a blog;
- *Updated-blog*: the company owns a blog and updates it regularly;
- *Translation*: the website is translated into at least one additional language (e.g. English, German, etc.);
- *Analytics*: a system of analytics to track visitors is installed in the website (e.g. Google Analytics);
- *Third-party*: the company appears on third party websites (e.g. news, posts, articles and links on websites out of the company's ownership);
- *My-Business*: the company has activated a Google My Business account;
- *Social*: the company has activated at least one social network;
- *Facebook*: the company has activated a business page on Facebook;
- *Twitter*: the company has activated a Twitter account;
- *Google+*: the company has activated a Google+ brand page;
- *LinkedIn*: the company has opened a page on LinkedIn;
- *Instagram:* the company has activated an account on Instagram;
- *YouTube*: the company has active a channel on YouTube or Vimeo;
- *Updated-social-network*: the company updates at least one social network regularly;
- *E-commerce*: the company has an active ecommerce;
- *AdWords*: the company has promoted its products and services through Google AdWords in the last 30 days;
- *Marketing*: the company manages a marketing campaign on social networks (e.g., the company has an editorial plan, advertising campaign, coupons, etc.);
- *Export*: the company has an online strategy to promote the export (note: answered "yes" if the marketing campaign and social networks are prepared in a foreign language).

After the data were collected, each enterprise was classified according to the three groups of digital strategy adoption - "offline", "online" or "online-and-active":
1. The company is defined as "*offline*" if there is no "updated website", no "updated blog" and no "updated social network";
2. The company is defined as "*online-and-active*" if at least one variable among "updated website", "updated-blog" or "updated-social-network" is positive and at least one variable

among "ecommerce", "AdWords", "export" or "marketing" is positive.
3.   The company is defined as "*online*" in all the other cases.

Variable statuses are collected in a spreadsheet shared across work teams of each Chamber of Commerce involved in the programme (Table 2):

Tab. 2: Survey spreadsheet excerpt

Company ID	The comany has an updated websie?	The company has a Blog?	The company has an account on Google My Business?	The company has a business page on Facebook?	The company has active a channel on YouTube or Vimeo?	The company has an active ecommerce channel?	The company promotes itself on Google AdWords?
17	0	0	0	0	0	0	0
18	1	0	1	1	0	0	0
19	0	0	0	0	0	0	0
20	1	0	1	1	0	0	0
21	0	0	0	1	0	1	0
22	0	0	0	1	0	0	0
23	0	0	0	1	0	0	0
24	0	0	1	1	0	0	0
25	1	0	1	1	0	0	0
26	0	0	1	1	0	0	0

Source: EccellenzeInDigitale programme

5.3 Results of the case study analysis

Firstly, a description of the statistical sample is provided: 32 out of 52 teams provided their data for 1119 records, each record corresponding to a company joining the programme. Each company was assessed ex-ante and ex-post. The remaining 20 teams datasets were discarded due to delay of data submission or high discrepancies between the centrally provided spreadsheet template and the submitted one.

The overview on the general results is presented in this section: the number of companies moving from one stage to the next, e.g. from offline to online, is counted. Figure 1 describes the comparison ex-ante versus ex-post for each stage.

Fig. 1: General Results: ex-ante vs ex-post
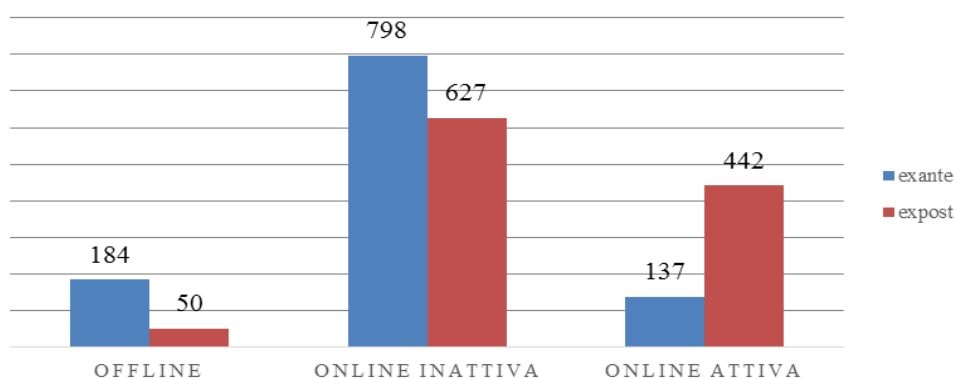
Source: Our elaboration

It is evident how, during the programme, several companies moved forward, from one stage to the next, upgrading their digital maturity. In September 2014, there were 184 offline companies (16% of 1119 total companies). After "EccellenzeInDigitale", only 50 companies were still offline, signalling that 73% of the originally offline companies achieved the programme objective: these companies "went online" and activated a website with up to date information.

As stated throughout this study, there is no clear proof of a direct influence of field agents on observed change. Nevertheless, one can say that the improvement in this category is strong enough to signal the positive effects of "EccellenzeInDigitale": digitalizators' intervention was free of charge and was promoted and supported by the Chambers of Commerce network. Moreover, due to the short timespan and the expected inertia in strategy and technology adoption, a positive impact on the lower segment of participating companies can be anticipated. Almost 134 entrepreneurs understood the strategic value of being online and undertook an investment to collect and publish online basic information about their businesses.

Moving forward to online companies: this category initially contained 798 firms, 71% of a total 1119. In September 2014, these companies registered an active and updated website but no digital marketing activities. After 6 months, in February 2015, 305 online companies upgraded to online-and-active, accounting for 38% of the original category size. The substantial upward shift of SMEs to higher digital maturity is promising: the introduction of more sophisticated digital marketing tools and strategies, such as e-commerce and online advertisement, indicates the start of a modernization process towards increased company competitiveness. Similar to the previous case, the absence of a control group, and rigorous testing, impose a cautious interpretation of this result. It is worth noting that 62% of online companies remained in the same category: it is possible that certain companies adopted some strategies and interventions, though not enough to be promoted to the uppermost category during the six-month period. Nevertheless, these companies benefited from the adoption of new digital tools and have been exposed to new concepts and topics related to digital maturity and competitiveness.

Finally, the online-and-active category (12% of a total 1119), is the last stage in the framework; there are no other possible upgrades from this stage. However, effective measures and improvements can be still adopted, to boost a company's digital profile and competitiveness. In summary, here is a representation of the programme's general results through a Markov Chain (Figure 2) and corresponding status change percentages.

Fig. 2: General results displayed with Markov Chain
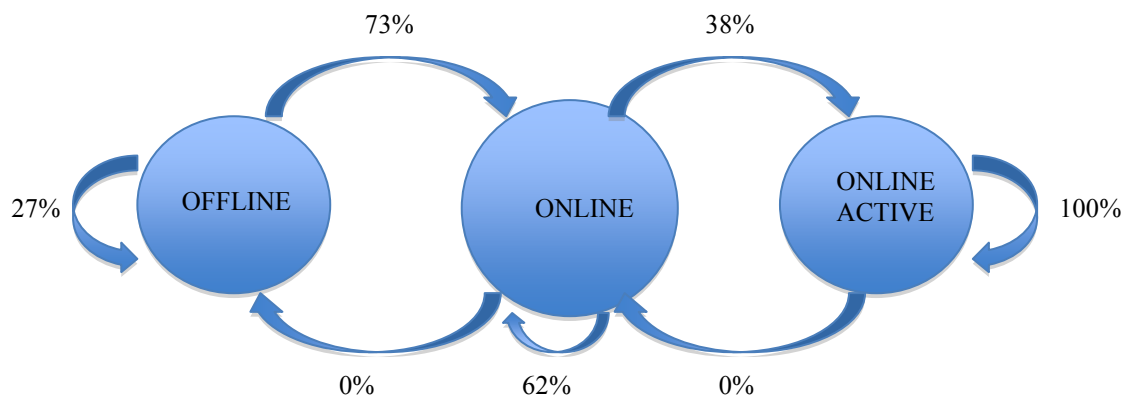
Source: Our elaboration

The second most interesting result of the study is the analysis of the intervention adoption rate: during the programme, "digitalizators" suggested several strategies to implement and tools to use. Business owners decided autonomously which suggested intervention to adopt, and when to adopt them. Among possible factors that influence adoption rate of each intervention, this research takes into account the complexity of targeted strategies or tools, the amount of time required for the implementation and maintenance of interventions, and the availability of proper resources and competences. The authors provide an insight for each indicator, based on direct observation within "EccellenzeInDigitale".

Fig. 3: Intervention Adoption Rate
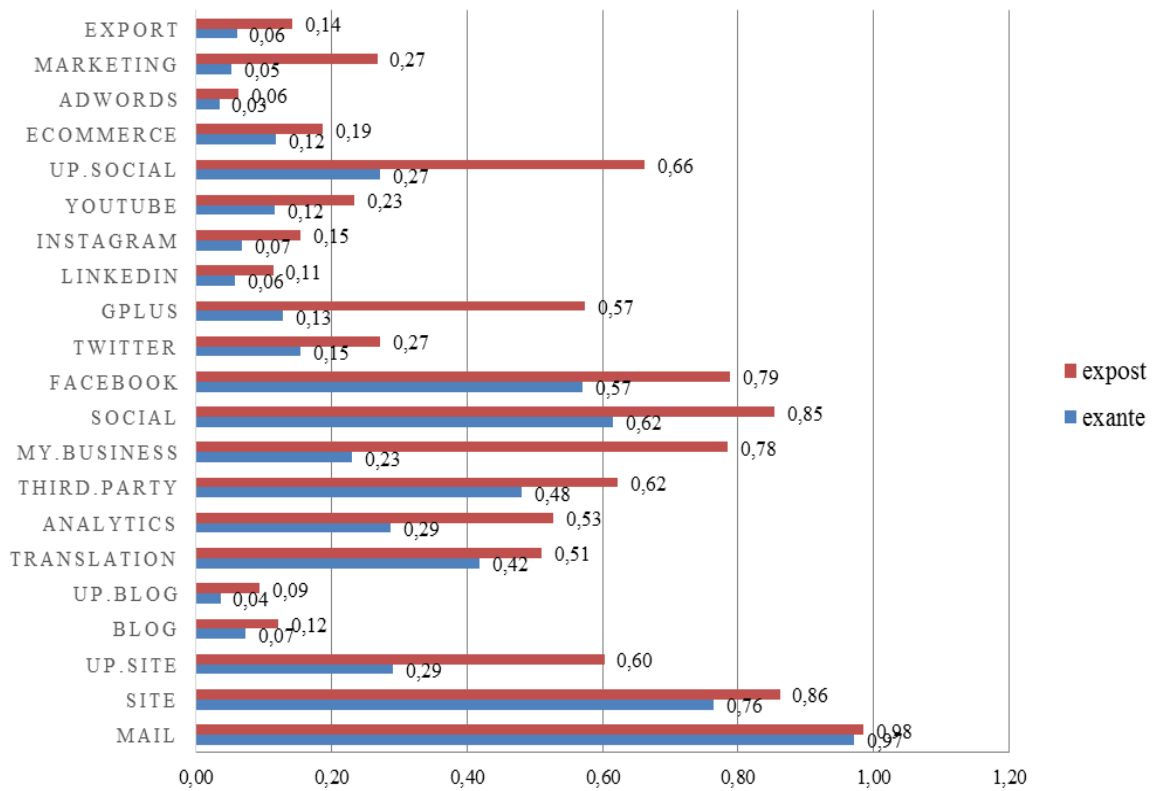
Source: Our elaboration

Figure 3 displays an overview of surveyed indicators relative to September 2014 and March 2015. The figure 4 includes a ranking of differentials between ex-ante and ex-post. Through these two figures, it is possible to gauge the relative weight of each intervention, considering initial and final level of adoption.

Fig. 4: Adoption Rate Differentials
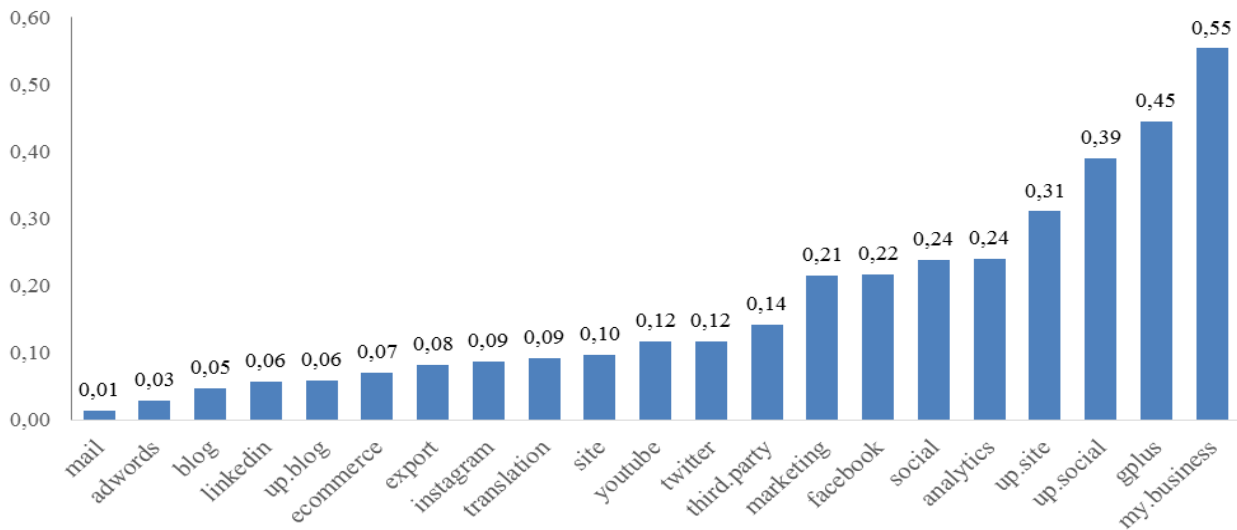
Source: Our elaboration

It is clear from observing this graph that *Google My Business* is the most adopted tool in the group, with a 55% increase, beginning at 23% and reaching a 78% adoption rate.

The second most adopted tool is a *Google+* page. The adoption rate increase, from 13% to 57% (+45%), is strongly correlated to the success of Google My Business: My Business is a bundle of services, and its activation includes a Google+ page.

The third and fourth most adopted strategies are the *updating of social networks* (+39%) and the *updating of business websites* (+31%). According to the digital maturity framework adopted in this research project, a website is considered updated when the company updates it at regular intervals. The same applies for social networks, where the category "updated social" implies that the business owner regularly updates at least one social network.

Descending the ranking, we find the fifth most adopted strategy: activation and use of *web analytics*. Web analytics information is vital for wise decision-making processes within any organization and should be used as a resource to understand customer profile and behavior. Through direct observation of "EccellenzeInDigitale", the authors verified that entrepreneurs often do not use data coming from their digital marketing channels to drive their decisions. In some cases, analytics tools were often installed and operative, but not consulted by business decision makers within the firm. Therefore, the role of "digitalizators" was useful to explain to entrepreneurs the importance of web metrics analysis and data-driven management.

"*Social channel activation*" is the next in the ranking with a 24% increment. The variable "social" in the BCG-Google framework turns to positive if the business has at least one active social channel. The initial share of 62% was already positive and the sustained increment could explain a general satisfaction and adoption by entrepreneurs.

Descending the adoption rate ranking, we find the activation of a Facebook page: increasing by +22%. At the end of the programme 79% of surveyed companies were active on Facebook with a business page. According to our previous variable "*updated social*", we can claim that approximately 66% of these businesses update their page regularly.

The intervention ranking continues with the "*Marketing*" variable: the indicator is positive if the company manages a marketing campaign on social networks through the adoption of an editorial plan, an advertising campaign or the distribution of discount coupons. The "Marketing" factor is more advanced than previous ones, and rests on basic elements, such as the activation and utilization of a social channel. Additionally, it requires a basic familiarity with digital payments to buy advertisements. "Marketing" started at 5% adoption level in the collected sample, and increased to 27% (+21%). This indicator covers different approaches and demonstrates that the entrepreneur has a clear strategy and plan in mind.

"*Third Party*" indicates that a company appears on third party websites with news, articles and links on websites out of the company's ownership. In this case, the ex-ante level was 48% and raised to 62% (+14%).

"*Twitter*" totalized a 12% improvement, rising from 15% to 27%. Compared with Facebook, Twitter is three times less popular within the sample. Twitter's functionality is therefore not as attractive to SMEs, which are already struggling among several available marketing channels. It is interesting to note that Google+ started from a lower ex-ante level (13%) and surpassed Twitter, with ex-post adoption at 57% (driven by Google My Business bundling).

The "*YouTube*" indicator, as twitter, gained 12%. Videos provide a solid platform for brand awareness, but are generally costly and difficult to realize. Probably for this reason, many entrepreneurs discarded YouTube as an option.

The "*Site*" indicator measures if a company owns a website. This feature was at 76% in September 2014 and increased by 10%. Therefore, most websites are obsolete, non-responsive and not up to date. In this case, programme coordinator invited field agents to collaborate with existing web agency: entrepreneurs, supported by programme intern, contacted their web agency or a new one and required quote for the creation or restyling of their website. The construction of a website can be time-consuming and resource-intensive task: therefore, six months is often too short period to accomplish this strategy with success.

The "*Translation*" indicator is active when a company website is translated in at least one additional language to Italian. The share of companies with a translated website was 42% ex-ante and 51% ex-post. However, translations can be expensive and difficult to maintain.

With regard to "*Instagram*" (a visual social network) among Italian SMEs in the project sample, ex-ante level was 7% and rose to ex-post 15%. Instagram adoption denotes advanced approach to digital marketing (like YouTube and Twitter implementation).

The "*Export*" indicator started at 6% and rose to 14%: a positive indicator suggests that companies had a digital strategy to promote their exports. Their marketing campaigns and social networks are translated in a foreign language. *"Export"* is an advanced strategy and the author expected a minor increase in adoption. Nevertheless, this result is promising, as 8% of analysed companies introduced an elaborate strategy to boost productivity and increase exports.

The "*E-commerce*" factor increased to 19% (+7%). Mature e-commerce requires a large amount of internal and external resources: updates, content creation, sales management and logistics are activities that demand specialized professionals. This "e-commerce" strategy was rarely adopted in the available sample of 1119 SMEs.

Getting closer to the end of the adoption ranking, we find "*updated-blog*" (+6%) and "*blog*" (+5%). These two results are interesting because they highlight how difficult it is to maintain a blog. Both strategies started at a low level, at 7% for blog and 4% for updated blog. Improvements in blog adoption were limited, despite the relative simplicity of blog activation. Blogs require constant work and absorb a considerable amount of resources. Therefore, few SMEs decided to adopt this strategy.

"*LinkedIn*" is the fourth indicator from the last, with a growth of 6%. Entrepreneurs often perceive LinkedIn as advanced and not useful in the short term. This belief could be proven wrong, since visibility on LinkedIn could create business opportunities, facilitating research of potential partners, suppliers and employees.

The second last variable is "*AdWords*", with a +3%. The entrepreneurs participating in "EccellenzeInDigitale" perceived advertising to be a superfluous investment and the advertisement investments were relatively low.

"Mail" is the last variable in our adoption ranking: 1% of companies adopted mail as a business tool during the six-month period. 97% of surveyed companies were already using emails to communicate with customers and suppliers. Thus, mail was widely adopted even before "EccellenzeInDigitale": it is a basic aspect of business communication among Italian SMEs.

After the complete presentation of adoption rate ranking, the authors suggest an additional division, based on the observation of share differential and ex-post adoption levels. The indicators that totalized an adoption rate below 15% and an ex-post level below 30% can be defined as advanced interventions. Such indicators are more sophisticated approaches that rest on underlying "building blocks": they are accessible and sustainable to structured businesses. The features respecting these thresholds are the blog, the updated blog, Twitter, LinkedIn, Instagram, YouTube, ecommerce, AdWords and export. Most of these strategies are in the second half of the BCG/Google grid: framework designers expected that these features would come at a later stage of digital maturity. There is an exception for blog and updated blogs: both of these are in the first half of the framework, grouped with basic strategies (e.g. mail, site, analytics), but received relatively little attention from entrepreneurs.

6. Conclusion and managerial implications

The increasing complexity and interdependence of international markets, the internationalization process and the trend towards production relocation and outsourcing of manufacturing require businesses to face the choice whether or not to exploit the country of origin of their offerings, with what degree of intensity, and by what methods. However, competition from emerging countries, the ability to leverage attractive factor characterizing the long western

industrial production and the still strong need that foreign consumers have to simplify the cognitive processes under evaluation of the product, as well in search of not simply the good features but also of meanings and values linked to a territory, are pushing in the opposite direction, stimulating the adoption of the "Country of origin effect" (COO) or ''Made-In'' as a strategic marketing tool.

The main findings of this paper concern the following points: 1. The exploration of the digitalizator's role for the increasing of e-tools use by the Italian SMEs; 2. Definition of the main categories of activities in which digital technologies are involved and used by the analyzed companies for the "Made in Italy" spread and strengthening.

With regard to the first point, it could be claimed that the external stimulus produced by "EccellenzeInDigitale" programme had definitely positive impact on the implementation of new digital tools, the entrepreneurs' awareness-raising and acquisition of skills related to the digital marketing and the "Made in Italy" enhancement through the principal web channels and tools. As we could see on the base of the analyzed case study, the "digitalizator" can provide firms with the new technologies and e-tools, new digital skills and, allowing them consequently to access new markets with new potential clients interested in the authentic and genuine Italian products. From our viewpoint the new professional profile of "digitalizator", carried out his or her activities as an external advisor/consultant, can really play a key role for the "Made-In" promotion.

Regarding the point 2, the potential use of digital tools for the different purposes before and after the intervention of a digitalizator is described in Table 3:

Tab. 3: Use of the digital tools for the different purposes by Italian SMEs

E-tool or technique	Website		E-commerce website		Web 2.0		App	SMM/SEM		E-mail/ Newsletter	
Item in our empirical analysis	*Updated website*		*e-commerce*		*Social*		*No item*	*Marketing + AdWords*		*Mail*	
	Ex-ante	Ex-post	Ex-ante	Ex-post	Ex-ante	Ex-post		Ex-ante	Ex-post	Ex-ante	Ex-post
Product Development	29%	60%			62%	85%					
"Made in Italy" product certification	29%	60%			62%	85%	No data	8%	33%	97%	98%
Marketing	29%	60%	12%	19%	62%	85%	No data	8%	33%	97%	98%
Sales			12%	19%			No data			97%	98%
After-sales services	29%	60%	12%	19%	62%	85%	No data			97%	98%

Source: our elaboration

In place of the crosses in Table 1 (section 3 of the paper), which indicated the use of a particular e-tool/technique for a particular purpose/activity for "Made in Italy" enhancement, the Table 2 shows the share of enterprises that have used this tool/technique before the digitalizator intervention and the share of enterprises that use them currently after the "EccellenzeInDigitale" programme impact.

On the basis of the data given in the Table 2 we can conclude that before the programme most SMEs analyzed could use the potential of the digital tools (website and web 2.0) available for product development purpose in comparison with other purposes, where for an effective implementation of activities was insufficiently developed the usage of e-commerce (only 12%) and SMM/SEM practices (only 8%). After the intervention of the digitalizators the share of marketing tools (marketing campaign on social networks or in a search engine) has increased significantly (by 25%), in accordance with what it is possible to argue that the "EccellenzeInDigitale" programme was aimed at increasing the potential use of tools for marketing activities.

The managerial implications are showing the advantages of using technology for an enterprise, considering it as a key for improving competitiveness. Through this contribute we can underline the

ability of the digital environment to generate value are, particularly through an external agents. Businesses and practitioners should consider the impact of digitization on the interactions between individuals and among business-systems and ambient, as well as the role of an external body for promoting and stimulating the growth of digital maturity and orientation of businesses toward digital innovation. Another fact, which is very important to take into consideration by managers, is that the public-private partnership in support of SMEs can be a first step toward awareness by companies about the importance of digital technologies for "Made In" promotion.

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TRACK 14

BRANDING AND VALUE CO-CREATION THROUGH ICT

Towards a new understanding of brand authenticity: seeing through the lens of Millennials
SIMONETTA PATTUGLIA, MICHELA MINGIONE

Le piattaforme degli intermediari di Open Innovation a supporto della value co-creation: un confronto tra la Service-Dominant Logic e la prospettiva strategica
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Towards a new understanding of brand authenticity: seeing through the lens of Millennials

SIMONETTA PATTUGLIA[*] MICHELA MINGIONE[•]

Abstract

Objectives. *The purpose of this study is to explore Millennials' perceptions of brand authenticity in relation to their experience with well-established brands.*

Methodology. *This study pursues a mixed approach, applying survey and focus groups as research methods. The quantitative study used cluster analysis to verify the differences and homogeneity of Millennials' brand authenticity perceptions of well-established Italian brands (Vespa, Peroni and Cinecittà Studios). Then, to explain and explore quantitative findings, focus groups revealed how and why Millennials judged these brands to be (in)authentic.*

Findings. *Four clusters of Millennials (i.e., the Engaged, the Cheated, the Believer, and the Sceptical) emerged, each ascribing a specific hierarchy to brand authenticity attributes. On the contrary, qualitative results show a transversal construct that unify Millennials' quest for authenticity, namely coherence (i.e., coherency over time, coherency between brand promise and its delivery and coherency between the brand identity and the consumers' identity).*

Research limits. *This research considers only Millennials and well-established brands. Therefore, the specific sample of respondents and brands might limit the generalizability of findings.*

Practical implications. *Managers should invest on Millennials, with a careful attention to misalignment of brand values over time and to gaps between the brand promise and its delivery.*

Originality of the study. *This study suggests a shift from a historically-based approach to a more holistic one that takes into account the multifaceted nature of brand authenticity related to their quest for coherency.*

Key words: *brand authenticity; Millennials; Italian brands; brand coherence.*

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1. Introduction

Brand authenticity can be considered as one of the "cornerstones of contemporary marketing" (Brown *et al*., 2003), a response to current trends of hyperreality and globalness (Arnould and Price, 2000; Ballantyne *et al*., 2006), and a new business imperative of the experience economy (Gilmore and Pine, 2007). Being a socially constructed phenomenon, several scholars have claimed that brand authenticity has the power to legitimize a brand within its context (Grayson and Martinec, 2004; Rose and Wood, 2005; Beverland, 2006; Thompson *et al*., 2006; Beverland *et al*., 2008, 2010). Concordantly, Aitken and Campelo (2011) underlined the importance of customers in engaging in the brand community and in co-creating brand meanings (Bertilsson and Cassinger, 2011). Nevertheless, non-customers might also have a crucial role in the construction of brand meanings, especially when they reject brands considered not authentic, generate brand avoidance through anti-branding communities, and diffuse a negative doppelganger of the brand image (Holt, 2002; Gustafsson, 2006; Thompson *et al*., 2006).

In particular, the new generation of Millennials (i.e., the cohort born after 1982 until 2000, Howe and Strauss, 2000) plays a relevant role in creating brand communities that might sustain or reject brands, depending on the perceived brand authenticity (Lantos, 2014), which could undermine the legitimization of well established brands. In addition, the construct of brand authenticity has an objective dimension strongly linked to the heritage of the company and related to the preservation of the brand historical identity over time (Postrel, 2003; Grayson and Martinec, 2004; Chhabra, 2005; Leigh *et al*., 2006; Fionda and Moore, 2009; Balmer, 2011; Wiedmann *et al*., 2011; Napoli *et al*., 2014). This time-related dimension of brand authenticity could be challenged by the Millennials' quest for innovativeness, triggered by their daily use of technology and social media (Raines, 2002; Tanner, 2010; Sashittal *et al*., 2015).

Drawing on the above, the aim of this study is to explore Millennials' perceptions of brand authenticity in relation to their experience with well-established brands (Vespa, since 1946; Peroni since 1846; Cinecittà Studios since 1937). In particular, we address the following research questions: Do Millennials share similar perceptions of brand authenticity? How and why do Millennials attribute (in)authenticity to a brand?

To answer to these questions, this research first explores the theoretical background, highlighting current perspectives on brand authenticity. Second, it offers a detailed methodology section, explaining the research environment, the research objectives and the adopted research methods. Third, it encompasses two research stages: the first, which makes use of a quantitative analysis to segment Millennials' perceptions on brand authenticity using cluster analysis; and the second, which is based on a qualitative analysis (i.e., focus groups) to explain the results from the cluster analysis, highlighting how and why Millennials attributed (in)authenticity to a brand. Finally, the findings are discussed and future research avenues are proposed.

2. Consumers' perceptions on brand authenticity

The literature on brand authenticity presents several definitions, from its early roots that contemplated authenticity strongly tied to an object (Bendix, 1997) to later advancements that consider it as "a claim that is made by or for someone, thing or performance and either accepted or rejected by relevant others" (Peterson, 2005, p. 1086), or "a socially constructed interpretation of the essence of what is observed rather than inherent in an object" (Beverland and Farrelly, 2010, p. 839), and "A subjective evaluation of genuineness ascribed to a brand by consumers." (Napoli *et al*., 2014, p. 1091),

In general, scholars from this stream of literature have tried to answer the question: "How do consumers attribute authenticity onto an object/service brand?" Starting from Bendix's definition of brand authenticity (1997), scholars and practitioners have investigated consumers' ability to determine the difference between what can be conceived as real or fake (Brown *et al*., 2003;

Grayson and Martinec, 2004; Rose and Woods, 2005; Chalmers, 2008; Beverland and Farrelly, 2010; Corciolani, 2014). Empirical findings have revealed that consumers struggle to discriminate the real from the fake (Rose and Wood, 2005; Corciolani, 2014). Nevertheless, results highlight that consumers have the power to negotiate brand meanings, finding authenticity also in the fake, attributing, for instance, authenticity to fictional places (Grayson and Martinec, 2004; Rose and Wood, 2005). Therefore, brand "hyperauthenticity" (Rose and Woods, 2005) could emerge when different consumers may perceive the same brand as authentic or inauthentic (Beverland and Farrelly, 2010). Actually, the complexity of brand authenticity fully emerges when considering its three main dimensions: objective, subjective and self-referential.

2.1 The objective dimension of brand authenticity

The objective dimension of brand authenticity is related to an object and strongly tied to its heritage related constructs (Postrel, 2003; Grayson and Martinec, 2004; Chhabra, 2005; Leigh *et al.*, 2006; Fionda and Moore, 2009; Wiedmann *et al.*, 2011; Mohart *et al.*, 2014; Napoli *et al.*, 2014). Grayson and Martinec (2004) called it indexical authenticity, claiming that an object is authentic when it is original, not a copy or an imitation. Therefore, consumers could evaluate this type of authenticity by relying on objective cues that imply the non-alteration of historical characteristics (Postrel, 2003; Leigh *et al.*, 2006). In line with this reasoning, the objective dimension requires the preservation of the brand heritage, including the maintenance of the historical brand identity (Leigh *et al.*, 2006; Pine and Gilmore, 2008; Balmer, 2011). Actually, the main dilemma that surrounds the objective dimension of authenticity is related to the tension between remaining true to the past and adopting the ever-changing consumers' demand (Brown *et al.*, 2003; Beverland, 2005; Beverland and Luxton, 2005; Balmer, 2011; Wiedmann *et al.*, 2011). In fact, the heritage could be a liability when consumers seek new products (Brown *et al.*, 2003). Concordantly, Beverland (2005) suggested a slow adaptation of the intrinsic characteristics of an object and the strategic decoupling of internal practices and external communication (Beverland and Luxton, 2005).

2.2 The subjective dimension of brand authenticity

The subjective dimension of brand authenticity is the result of socially constructed brand meanings related to every market offering, which can be evaluated by consumers (Brown *et al.*, 2003). In fact, consumers may differ in evaluating brand authenticity by mediating the meanings ascribed to a brand (Brown *et al.*, 2003; Peterson, 2005; Beverland and Farrelly, 2010). This is especially true within brand communities that share and shape brand meanings (Muniz and O'Guinn, 2001; Thompson *et al.*, 2006). In this scenario, authoritative performances derive from communities and help in achieving a collective sense of identity that fosters the consumers' quest for belongingness and iconic relations with brands (Arnould and Price, 2000; Beverland *et al.* 2010). In particular, a second cue that consumers use to assess authenticity has been called iconic, being "something whose physical manifestation resembles something that is indexically authentic" (Grayson and Martinec, 2004, p. 298). In this context, this subjective dimension requires a deeper relationship with consumers who socially construct brand authenticity within their brand communities (Kotzinets, 2001; Fine, 2003; Kates, 2004; Leigh *et al.*, 2006; Wilson and Morgan, 2011; Charmley *et al.*, 2013). For instance, examining brand authenticity co-creation within a particular context (i.e., skateboarders' community), Charmley *et al.* (2013) found that consumers co-created brand authenticity meanings by drawing on social comparison (i.e., the inauthentic other). Similarly, the gay's community and the MG's community co-created the authenticity of two products brands, namely jeans and cars (Kates, 2004; Leigh *et al.*, 2006).

2.3 The self-referential dimension of brand authenticity

The self-referential dimension of brand authenticity mainly derives from Arnould and Price's notion of authenticating acts, which are "self-referential behaviors actors feel reveal or produce the true self" (p. 140). This in line with Holt (2002), who suggests that brands might help consumers in producing the self and cultivating their identities. Thus, a brand is authentic only if it is "a genuine expression of an inner personal truth. I like this because I am like that" (Postrel, 2003, in Beverland, 2005, p. 1007). Beverland provides further insights to this stream of research proposing three types of brand authenticity: pure, approximate and moral, related to the objective, subjective and self-referential dimensions of brand authenticity, respectively (Beverland *et al.*, 2008; Beverland and Farrelly, 2010; Beverland *et al.*, 2010). In particular, consumers seek moral authenticity when they want to feel virtuous, looking for the brand connection with personal moral values (Beverland *et al.*, 2008; Beverland and Farrelly, 2010). Freedom and excellence are two examples of self-authenticating cues (Beverland *et al.*, 2010). Note, some authors call this last type of authenticity "existential" (Leigh *et al.*, 2006; Özsomer and Altaras, 2008; Morhart *et al.*, 2014), deriving from the self and helping the consumer in achieving funny and pleasurable experiences (Leigh *et al.*, 2006).

3. Methodology

3.1 Research environment

This section aims to explore the research environment of the present study, explaining the main features that characterize Millennials and the brands selected (i.e., Vespa, Peroni, and Cinecittà Studios) for both quantitative and qualitative analyses.

Taking the lens of a specific generation helps in studying different people who share time and space leading them into a collective persona (Mannheim, 1952; Howe and Strauss, 2000). In particular after the baby boomers (i.e., individuals born in the 50s-60s), the Millennials represent the new "Great Generation", broadly defined as the Generation Y (Howe and Strauss, 2000; Wilson and Gerber, 2008; Meister and Willyerd, 2010). In particular, this is the first generation that "contributes, shares, searches for and consumes content plus works and plays on social platforms" (Bolton *et al.*, 2013; p. 245). Making daily use of technology and digital and social media (Raines, 2002; Tanner, 2010; Bolton *et al.*, 2013; Sashittal *et al.* 2015), the Millennials are shaped by the era of the Internet, by mass marketing and pop culture (Raines, 2002), by the 9/11 trauma, globalization and environmentalism (Tanner, 2010). For this reason, Millennials are also claimed to be the "Internet generation", the "digital generation", "natives", "immigrants", the "dot.com generation" and the "Nintendo generation". Alternative labels, are "KIPPER" (Kids in Parents' Pockets Eroding Retirement Savings), "echo boomers" and "boomlet" (referring to their parents being baby boomers). Nevertheless, as anticipated, the majority of the academics and practitioners agree in defining them as Generation Y (Howe and Strauss, 2000; Wilson and Gerber, 2008; Meister and Willyerd, 2010). In particular, the analysis of the literature has highlighted specific features that characterize this generation: a) special, as they feel they are smart and "cool" because they are smart; b) confident, adaptable and flexible; c) team and teamwork oriented and deeply committed to community volunteering and no profit organizations; d) driven by some conservative values, such as moral consciousness and civic duty; e) ld by a "Just do it" philosophy of acting and behaving; f) better educated, more affluent and ethnically diverse; g) technologically fluent, multitasking and simultaneously connected; h) Grown up in e-commerce with great tech advances; i) confident with changes, globalization and global perspectives; j) globally connected and open to new businesses and challenges; k) "hyper-communicators": they daily communicate with friends, maintaining constant contact with them; l) possessing a high level of sociability, morality, high value relationships (Howe and Strauss, 2000; Shepard, 2004; Debruyne, 2006; Raines, 2002;

Krishnamurthy and Dou, 2008; Wilson and Gerber, 2008; Tanner, 2010; Bolton *et al*., 2013; Sashittal *et al*., 2015).

As opposed to the innovative framework characterizing the Millennials- generation, it has been considered valuable to select well-established Italian brands that have represented important assets of Italian manufacturing (i.e., Piaggio and Peroni), and service (Cinecittà Studios) sectors in the last decades, consolidating their brand authenticity over time. In particular, since 1946 the Piaggio company has produced the globally known Vespa motorcycle, which became a symbol of national development in the 60s. In producing the best known Italian beer since 1846, Peroni has also played a relevant role in the Italian scenario. Finally, the film studio company Cinecittà Studios has constituted an important pillar of the Italian service (entertainment) sector since 1937.

3.2 *Research objectives*

Analysis of the literature has revealed an increase in scholars' interest in understanding how consumers attribute authenticity to a brand and only recently have researchers engaged in examining this phenomenon by taking a quantitative approach (Napoli *et al*., 2014; Liu *et al*., 2015). This study aims to contribute, with a mixed methodology, to this relevant academics' and practitioners' conversation taking a Millennials' lens. Millennials have been selected for three main reasons: 1) their quest for innovativeness could challenge the objective dimension of brand authenticity, related to elements such as heritage and place; 2) their commitment to community and hyper communication could challenge the subjective dimension of brand authenticity, related the consumers' social construction and co-creation of meanings; 3) they are the new great generation of consumers but are still under-researched in the marketing field (Nowak *et al*., 2006; Bolton *et al*., 2013). Therefore, this special cohort could pose forthcoming challenges for the branding domain, highlighting current need for further research. In this framework, the scope of the present research is to explore if Millennials share the same perceptions of brand authenticity (quantitative analysis) and how they attribute (in)authenticity to a brand and why they evaluate the considered brand (in)authentic (qualitative analysis).

3.3 *Research Methods*

To achieve the research objectives, two studies were planned combining quantitative and qualitative research methods. Therefore, we firstly collected quantitative data by means of a structured questionnaire that conceived brand authenticity as a multidimensional construct where quality, heritage, originality, sincerity and reliability together defined a brand as authentic. Then, a hierarchical cluster analysis has been performed to explore similarities and differences of Millennials perceptions of brand authenticity. In particular, we performed a hierarchical cluster analysis using Ward's method, which has been deemed an appropriate tool to investigate multidimensional constructs (Staake *et al*., 2012). In June 2014, a 28-item questionnaire was administered to 400 Italian Millennials participants. Respondents were asked to provide their opinion on a seven-point Likert scale, ranging from 0 (completely disagree) to 6 (completely agree). The elimination of questionnaires with missing values led to 382 valid responses. The questionnaire included three sections: 1) demographic information; 2) brand authenticity dimensions (brand heritage, quality commitment, sincerity, Napoli *et al*., 2014; originality and reliability, Bruhn *et al*., 2012); and 3) brand related constructs (brand image, brand trust and premium price, Wiedmann *et al*. (2011). Before administration, the survey items were first translated into Italian and then back-translated by a translator whose mother tongue is English. This procedure ensured scale validation allowing the new scale to share the same psychometric properties of the original scales (Brislin, 1986).

To explain and explore quantitative results, qualitative research encompassed focus group discussions as suggested by Kitzinger (1994, 1995). This methodology was deemed appropriate because it helps when examining how people think and why they think and relate in that way

(Kitzinger, 1995; Kitzinger and Barbour, 1999), therefore highlighting people's attitudes and behaviour (Greenbaum, 2000; Hydén and Bülow, 2003). To analyse the focus groups results, a thematic analysis was applied (Wiggins, 2004), using an *a priori* template (i.e., the questionnaire) (Fereday and Muir-Cochrane, 2006). In particular, only codes were deductively developed, whereas the whole analysis of themes and sub-themes has been inductively conducted (Boyatzis, 1998). To recruit the participants to the focus groups, 33 students attending the "Marketing, Media and Communication" advanced course were selected. In line with the need for homogeneity in background, interest in participation and high interaction for participants in the focus groups (Kitzinger, 1994; Stewart and Shamdasani, 2014), this group had expertise in marketing constructs and an interest in specific aspects of marketing. On March 2015, the aforementioned questionnaire was administered again. Analysis of the data has been manually performed having in mind the two main dimensions used to cluster the previous sample: customer/non-customer and high/low scores on brand authenticity. A total of 18 students mirrored the retrieved clusters and participated in the four focus groups, namely the Engaged, the Cheated, the Believer and the Sceptical, with at least one male or one female for each group (see Table A1 in the Appendix). No incentive was provided for participation, but the majority of the participants showed great enthusiasm for the initiative (R17 "I never had such a beautiful and realistic experience about marketing a brand"). Before starting the interviews, participants were informed that the purpose was to gain insights into their perceptions on brand authenticity and they were guaranteed freedom to express their true opinion, also communicating which brand they were supposed to talk about. Then, how each segment of Millennials attributed (in)authenticity to a brand was explored. In particular, questions to be addressed were: what should a brand do to be authentic, in general and in relation to the quality, heritage, originality, sincerity and reliability dimensions; why participants attributed (in)authenticity to the particular brand object of their interviews. Each focus group interview lasted 60-75 minutes, was video-recorded and transcribed. Then, key themes, their commonalities and differences were identified.

4. Results

4.1 Clustering Millennials' perceptions on brand authenticity

The software SSPS 8.0 has been used for statistical analysis. First, the constructs' reliability was ascertained by means of Cronbach's alpha (Appendix, Table A2). This test helps in verifying the internal consistency of the variables by measuring a specific construct (Malhotra, 2008) and its values vary from 0 to 1, where values above 0.60 indicate a good internal consistency (Janssens *et al*. 2008). Then, the hierarchical cluster analysis was performed. Four clusters of Millennials (i.e., the Engaged, the Believer, the Cheated and the Sceptical) emerged (Figure 1). In general, high and low consumers' perceptions of brand authenticity corresponded to high and low scores respectively of consumers' perceptions on brand image, brand trust and premium price. It is interesting to note that no hierarchy between brand authenticity dimensions was found. The detailed analysis of the four clusters indicates:

1) The Engaged: Consumers that conceive the brands as authentic, have high perceptions of the brand image and brand trust, and are willing to pay a premium price. The highest brand authenticity has been attributed to Peroni and the least to Vespa. Despite Vespa's customers having already paid a premium price to purchase it, they reported the lowest scores in their willingness to pay a premium price for such a motorcycle.
2) The Believer: Respondents with no prior experience of the brand but showing positive perceptions of brand authenticity, brand image, brand trust and premium price. This group of non-customers showed higher values than those reported by their Engaged counterparts. These high scores, based on mere perceptions of potential customers, confirm the strong appeal of these well-established brands. In particular, Vespa has been perceived as the most authentic

brand, followed by Cinecittà. Because Peroni did not appear in this cluster, prior experience of the beer seems to be necessary to appreciate this product brand.

3) The Cheated: Actual (or former) customers not conceiving the brand as authentic, and showing low scores for brand image, brand trust and price premium. In particular, manufacturing companies showed the highest values with respect to the service one, indicating that customers might feel most cheated when they had a negative experience of services with respect to products. In particular, customers attributed to Cinecittà Studios the lowest scores of brand authenticity and brand related constructs.

4) The Sceptical: Non-customers who perceive low brand authenticity, brand image, brand trust and premium price. In particular Cinecittà has been perceived as the most authentic brand, followed by Peroni and Vespa.

Fig. 1 The four-cluster solution
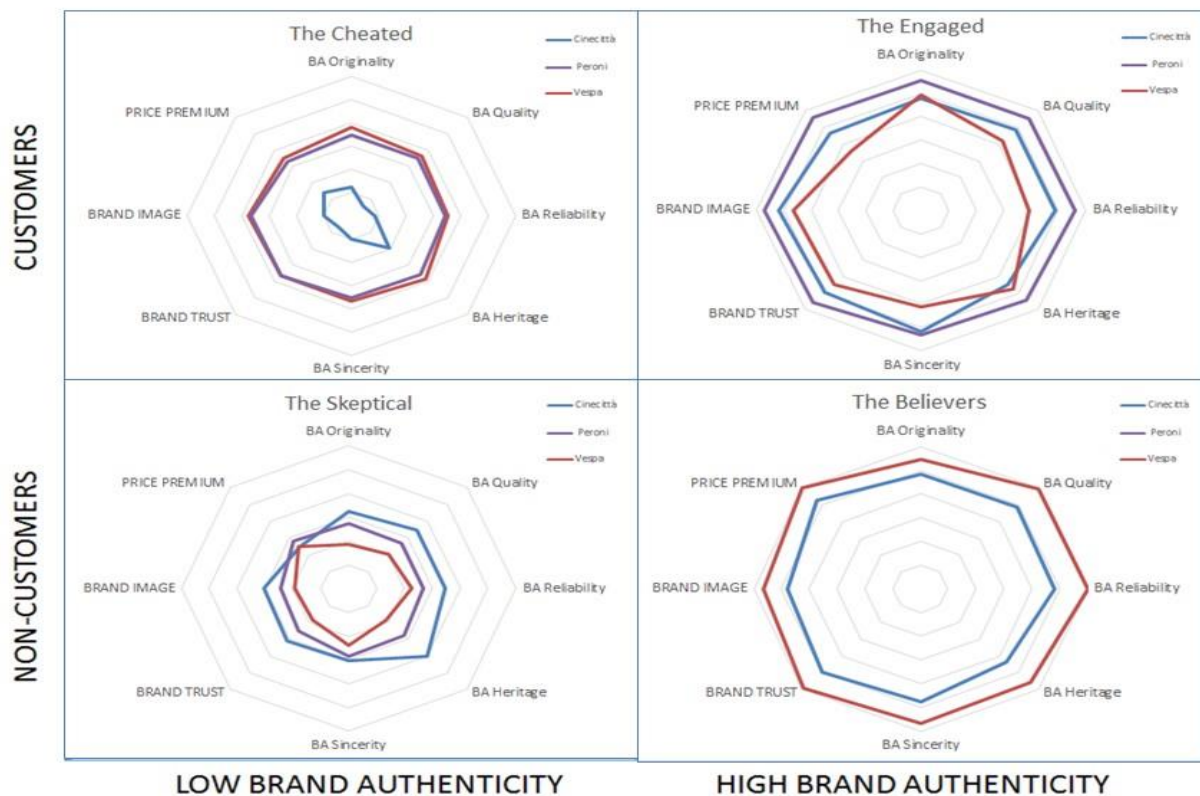
Source: our elaboration

4.2 Millennials' quest for coherence

Results from the group interviews did not mirror the segmentation emerged in the quantitative cluster analysis. In fact, qualitative findings revealed a main theme that integrated Millennials' perceptions into a unified framework, namely their quest for coherence. Therefore and basically, to be authentic, Millennials ask brands a high degree of coherency. In particular, Millennials attribute authenticity when the brand shows coherency over time, coherency between brand promise and its actual delivery and coherency between the brand identity and the consumers identity.

4.2.1 Coherency over time

The first dimension required by Millennials in order to be authentic is the coherence of the brand identity and brand meanings over time. Firstly, coherency over time highlights the origins of

the brand quality, which is related to the continuity of the brand promise over time. In fact, it certifies the reliability of the brand and its uniqueness, confirming that the brand has not been contaminated by economic and social trends. Of course, companies who are not coherent over time, are not considered as authentic. This can be seen from the two quotes below:

R1, R2, R3: "These companies endure over time because their excellent quality never decreased."
R3: "If you have a great heritage, you surely are authentic, like Cinecittà Studios, that has never been contaminated by the economic crisis. This company has been able to be coherent over time and also to renew itself with the opening of the exhibition Cinecittà Shows Off.

Another element that impacts on coherency over time is the nostalgic feelings of consumers. In fact, this type of Millennials is very tied to past times, eventhough they never experienced it. This is especially because they recognize the conversation and the happy feelings of their parents and friends, who grew with these types of brands. Therefore, an authentic brand should be able to communicate a glorious past that sometimes, has been recently lost. In particular, what Millennials blame is the change of the brand identity and, importantly, of the brand values, which are now threaten by globalization and driven by utilitarian principles. This is easiliy readable from the quotes below.

R7: "An authentic brand makes me understand that all generations are similar. My father had to fight to have a Vespa. Vespa represents his engagement to my mom, it represents my mom and dad's emancipation."
R6, R7, R8, R9: "I am tied to the Italy of the 60's", "Vespa reminds the Italian golden age." "Also Cinecittà Studios reminds me golden times for Italy", "It's strange, we miss the 60's even if we never experienced them. Maybe it is because now we leave in a bad time for economy".
R12: "Cinecittà Studios has a unique heritage but has currently lost its cultural and artistic values. From being internationally known, the brand turned into a money machine focused on profits to survive.

4.2.2 Coherency between brand promise and its actual delivery

The second dimension required in order to be authentic is the coherency of the brand promise and its actual delivery. Therefore, they do not care about heritage, which is not their main driver for purchase. In particular, Millennials define inauthentic a brand that does not respect the expectations they rely on it. In fact, for example, they highlight that if they expect a brand to be informal and unsophisticated, the brand can not communicate exclusivity. In line with this, brands should respect the promise they make when dealing with Millennials.

R4: "My purchase driver is the match between my expectations and the brand actual delivery. Can I drink Peroni? Yes! Is it good? Yes! Has it a good ratio of quality/price? Yes! Well, this is a quality product. Regarding Vespa, is it confortable? Yes! Does it take me wherever I want to go? Yes! Well, this is an authentic brand to me!"
R3: "Its authenticity also stands out in the good price/quality ratio. For example, I went to the Peroni's House, a sort of pub, and I really found it inauthentic because prices were too high, tables very clean and the atmosphere was too formal. This was not what I expected: Peroni is unsophisticated, it is not elitist or exclusive."

As a consequence to Millennials quest for coherence between brand expectations and brand delivery, the misalignment between brand communication and its actual delivery has been strongly criticized. As such, Millennials conceive communication as a vehicle for transparency and sincerity. Strongly, authentic companies should also communicate their negative aspects. In other words, this generation ask for the transparency of brand values, meanings and importantly, identity. For example, some Millennials felt cheated when discovered two product brands sharing the same corporate brand (i.e., Peroni and Nastro Azzurro), whilst some of them went suspicious with partnership between brands they felt misaligned (i.e., Peroni and Eataly, which is the international well-known retailer of the Italian hancrafted food and beverage).

Moreover, when consumers do not know the brand, they use to rely on others' comments, such as parents or friends (word of mouth) to certificate the authenticity of the brands. Important to note, social communities, such those present in Facebook, may play a crucial role in the legitimization of the brand, creating an echo of new brand meanings that might destroy its authentic image.

R15: "Sincerity is a verifiable quality, and I usually do not trust what I have not tried before. In this case I will rely on comments of other consumers. For example, when I visited Eataly, my boyfriend noticed that the Peroni was there. We considered the partnership Peroni-Eataly so incoherent!"

R16: "Can a brand be sincere? A brand is never sincere! That's the point, every brand has a negative side and companies never show it. If a brand were 100% sincere it should also have to communicate its negative aspects and companies never have this kind of communication! Are you pretending that Peroni and Nastro Azzurro share the same corporate brand and this has never been communicated to consumers? That is insane! I want to buy Nastro Azzurro not Peroni! Do you see any sincerity in it?"

R16: I also appreciate comments of experts, like bloggers who ensure the brand authenticity"

R14: "I trust only what I know. When I do not know I trust my friends and they told me the Peroni is not authentic, they prefer more handcrafted beers."

R17: "I also trust what I know, but if I do not know a product or service I rely on my mother or my grandmother. I do not need comments of experts."

R16: "I woud never drink a Peroni with my friends. This beer is totally unoriginal, why should I choose it? I would take a Belgium beer, or a German one, that's cool! If you drink a Peroni, you are a loser. To give an example, a friend of mine posted a photo on Facebook holding a Peroni and someone commented: What do you drink? Peroni? Such a loser!"

4.2.3 Coherency between the brand identity and the consumers identity

The last type of coherency required by Millennials in order to consider a brand as authentic is the coherency between the identity of the brand and the customers' (or not customers') identity. In line with this, they do not require a strong heritage (i.e., coherency over time), or a fulfilled brand promise (i.e., coherency between the brand promise and its actual delivery). In fact, this type of Millennials asks for the alignment between the expectations about the brand (i.e., perceived brand identity) and their self-identity. Therefore, for example, if they perceive they have an identity which is chic, the Vespa, coming from the 60s, is considered authentic as it is a brand with an elegant identity (R1: "Vespa also makes me feel more elegant and feminine, in the 60s everyone was so elegant!"). Important to note, many of them identify their identity connected to their national identity (i.e., Italian). In fact, these Italian brands have been considered authentic or inauthentic when they mirror (i.e., are coherent with) the national identity or when they do not respect it (i.e., when the brand identity is not coherent with the nationa identity). Therefore, this type of Millennials can be considered strongly patriotic, as it seems that they reject the brand because feel cheated in their Italian pride/Italian identity, or accept the brand when it mirrors the national identity. Some of them associate the brand meanings to various product or services whose image is strongly related to the Italian one. For example, when Peroni's conceived identity is perfectly aligned with the national one, Millennials associate it to the national product or service they use when they drink Peroni, as highlighted by following comments:

R4: "I drink Peroni in my leisure time with my friends, especially when I go back to my homeland. Peroni is drinking quality with some good food, like pasta. Peroni is: friends, pasta." R5: "I drink Peroni when I watch a football match with friends and when I eat pizza. Peroni is: friends and pizza at home. It is the Italian championship.

R12: "I feel cheated in my Italian pride. Cinecittà Studios should elevate the quality of its services to honour its originality and uniqueness instead of losing its values."

R13: "These brands completely lost their uniqueness. Heritage is not enough. Peroni is sincere and reliable, but being a discount brand it's the shame of the Made in Italy. It is actually the beer of Roman people!"

R10, R11, R12, R13: "I am sorry for this sort of ending. My beloved country should be more appreciated!" "So many countries sell products and services of low quality, not unique and original yet endorsing and appraising their assets better than Italian brands!"

5. Discussion

Based on a mixed methodology, this study aimed to answer the following questions: Do Millennials share similar perceptions of brand authenticity? How and why do Millennials attribute (in)authenticity to a brand?

The quantitative findings provided a general overview of the potential segments of Millennials, contributing to the development of the literature on brand authenticity. In fact, the cluster analysis highlighted the heterogeneity of Millennials' brand authenticity perceptions, revealing four different clusters segmented into two main dimensions: customer vs. non-customer, and high vs. low perceptions of brand authenticity. In particular, high perceptions of brand authenticity were found for the Engaged and Believer Millennials, whereas the opposite was found for the Cheated and Sceptical Millennials. These results substantiate that companies should deal with brand authenticity as a relevant component of successful brands (Beverland, 2005; Kapferer, 2008) strongly linked to consumers' brand trust (Balmer, 2012a; Schallehn *et al*. 2014).

The segmentation that emerged represented a starting point for qualitative research that contributes to theoretical advancements on brand authenticity. Nevertheless, despite we divide the interviews into the previoulsly obtained four clusters, qualitative findings show a different segmentation of Millennials. Actually, no segmentation emerged because qualitative findings revealed a main theme that integrated Millennials' perceptions into a unified framework, namely their "quest for coherence". This article, then, contributes to a new understanding of Millennials' perceptions on brand authenticity, proposing that organizations should seek for coherence in order to deliver an authentic brand. In particular, Millennials attribute authenticity to a brand when the brand shows coherency over time, coherency between brand promise and its actual delivery and coherency between the brand identity and the consumers identity. Therefore, this study confirms the multifaceted nature of brand authenticity, which has been highlighted by many scholars of the field (Grayson and Martinec, 2004; Beverland *et al*., 2010). Nevertheless, the multifaceted nature seems now to be linked to a new construct, namely coherence. Despite coherence is a new construct in this domain, somehow, the three types of coherency remind scholars' previous research on brand authenticity, which suggested three dimensions of the construct, namely the objective, the subjective and the self-referential dimensions highlighted in our theoretical framework.

Nevertheless, this article goes beyond previous literature by adding the construct of coherency. First, we suggest that Millennials don't require the mere heritage linked to past (Postrel, 2003; Grayson and Martinec, 2004; Chhabra, 2005; Leigh *et al*., 2006; Fionda and Moore, 2009; Wiedmann *et al*., 2011; Mohart *et al*., 2014; Napoli *et al*., 2014), but also coherence of brand identity and values over time. Taking this perspective, their quest for continuity seems to be somehow distonic to their young age and to their quest for global connection and openness to change (Raines, 2002; Tanner, 2010). Nevertheless, other scholars found that Millennials may show some conservative values, such as moral consciousness and civic duty (Howe and Strauss, 2000; Shepard, 2004; Wilson and Gerber, 2008; Tanner, 2010). Therefore, substantiating previous research, this article highlights the conservative side of Millennials, who ask for the continuity of brand values over time and not innovation.

Moving towards the subjective dimension highlighted by some scholars (Beverland *et al*. 2010; Brown *et al*., 2003; Grayson and Martinec, 2004), we suggest that, in comparison with past studies, our analysis reveal that Millennials are again conservative and tough consumers to be satisfied. In fact, to them, the coherency between the brand promise and its delivery is at the base of an authentic brand and the premise for a true and real relationship between them and the brand. In doing so, they also rely on others' comments to verify the authenticity of the brand. Therefore, it seems that this type of consumers ask for a collective dimension of brand authenticity. Therefore, if the brand does not respect the promise made to the whole community, it may drives towards a negative word-of-mouth, triggering a "domino effect" that continuously challenges the authenticity of the brand. Of course, this is in line with Millennials as hyper-communicators. In fact, they daily communicate

with friends, maintaining a constant contact with them, especially through brand communities (Tanner, 2010; Sashittal *et al.*, 2015; Bolton *et al.*, 2013).

Concordantly and finally, whilst the coherence between the brand promise and its delivery is more related to communal experiences, we also suggested a third type of coherency, which is more related to the individual construction of the self, namely the alignment between the brand identity and the consumers identity. Therefore, this study also highlights that a brand is able to enhance Millennials self-referential quest for authenticity. For example, our results show that the brand Vespa has been able to foster consumers' individual identities that were looking for freedom and elegance. These findings substantiate freedom and excellence as self-referential authenticating cues, as suggested by Beverland and Farrelly (2010). Of note, Millennials show a strong engagement and attachment to their Country of origin. In fact, they conceive Italian brands as an extension of their identity and therefore, if these brands do not respect the Italian values of quality, design and excellence, they felt cheated themselves.

In addition to the aforementioned theoretical contributions, this study also highlights relevant implications for managers. First, Millennials give strong importance to the continuity of the brand historical path and to the stories and experiences of their peers. Therefore, marketers must be able to build a relevant brand communication through new media platforms (such as social networks and mobile devices) and shared connections maintaining a great continuity - coherence - with ita past actions and values. Second, to accomplish Millennials quest for the delivery of the brand promise, managers should be very careful in managing gaps and misalignment between the brand promise and its actual delivery. Therefore, managers should have a clear brand promise, and try to avoid gaps between what they communicate and what they really deliver. In line with this, managers should remember that communication is a primary source of knowledge and that it should mirror the symmetrical positioning of the customers. In this context, the company should use some core values to create the brand offerings (and therefore, Millennials' expectations) and to deliver it as covenanted, including the "reason why" the customer should adhere to. This is strictly related to the third type pf coherency (i.e., self-referential). Therefore, a brand should present a clear positioning, recognizable also by consumers, that will adhere to it (joining the brand) or reject it. This is also true for communal experiences (family, peers, traditional and social communities) that surely enhance the self-expression of the individual. In particular, present times are a meta-managerial challenge for Italian companies: a negative country-of-origin effect that makes the Italian Millennials feel somehow "cheated" by the brands themselves, even if they are aware about the structural Italian economic situation and conjunctural political one. They feel somehow betrayed by their Italian identity and "patriotism" towards Italian brands. Companies have to struggle actively against perceptions of losing quality, coherence, values. In other words, authenticity. They must be able to rebuild and communicate innovation - as they exceptionally did during the Baby Boomers'period (50s-60s) - extraordinary manufacturing, products and services, unique emotions, even though linkable to the past, always seen as a "golden age".

From a very operational approach, and related to quantitative findings, this study suggests managers to protect the engaged Millennials and to enlarge this group by actively managing a sophisticated Customer Relationship Management (CRM) strategy and programme; the technological relational platform should be strictly projected and connected to social media channels (blogging, microblogging, social networking) and their influencers should be monitored and measured in theis opinions. The company should, nonetheless, invest in the Believer and Sceptical groups of non-customers through communicative actions in social media channels (to act in the awareness, image and reputation domains) but also in advertising and promotion to solicit Millennials' price-sensitivity and emotional engagement. The brands should finally invest in public relations strategies (comprised of online public relations) and plans to hit the Cheated groups of customers who might seriously evolve to engage in and even catalyze negative words-of-mouth, antibranding communities and boycott consumerist movements, both national and international.

6. Conclusions

Taking the digital generation perspective, this study offers a new understanding of the brand authenticity construct. Therefore, despite our quantitative analysis divided this type of consumers into four clusters (i.e., Engaged, Believer Cheated and Sceptical Millennials), qualitative results show a transversal construct that unify Millennials' quest for authenticity, namely coherence. Consequently, and in line with recent research proposing a relational-based approach to brand authenticity (Ilicic and Webster, 2014), this article suggests moving from a historical-based approach towards a more holistic one that takes into account the multifaceted nature of brand authenticity related to coherency.

Building on the above, future studies focused on conceptualizations of relationships between brand authenticity and coherence are strongly needed to address the following relevant research questions: "How can companies achieve each type of brand authenticity coherency?" and "Is the simultaneous alignment of these three types of authenticity attainable?". Moreover, this study could be a valuable starting point for the development of the conversation on corporate brand alignment between academics and practitioners (Hatch and Schultz, 2001; Balmer, 2012b; Urde, 2013). Valuable research questions to be investigated could be: "Does the alignment of corporate brand attributes or identities help in achieving brand authenticity?" and "What is the relationship between the multifaceted nature of corporate brands and the multifaceted nature of coherency?"

The main limitation of this work is related to the specific sample of respondents (Italian Millennial students of Management) and brands, which limits the generalizability of findings. Although Millennials represent a relevant part of actual and potential customers for several brands, respondents of different ages could generate different segmentations and hierarchies of brand authenticity attributes. Furthermore, to avoid cultural biases, cross-national studies are strongly needed, including several age groups and brands operating at national and international levels.

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Appendix

Tab. A1 Partecipants' Profile

Label	Age	Gender	Cluster	Brand (s)
Respondent 1 (R1)	23	female	engaged	Vespa
Respondent 2 (R2)	23	female	engaged	Vespa & Peroni
Respondent 3 (R3)	24	female	engaged	Cinecittà Studios
Respondent 4 (R4)	24	male	engaged	Vespa & Peroni
Respondent 5 (R5)	23	male	engaged	Peroni
Respondent 6 (R6)	23	female	believers	Vespa
Respondent 7 (R7)	24	female	believers	Vespa
Respondent 8 (R8)	24	female	believers	Cinecittà Studios
Respondent 9 (R9)	23	male	believers	Vespa
Respondent 10 (R10)	24	female	cheated	Peroni
Respondent 11 (R11)	25	female	cheated	Vespa
Respondent 12 (R12)	24	female	cheated	Cinecittà Studios
Respondent 13 (R13)	25	male	cheated	Cinecittà Studios & Peroni
Respondent 14 (R14)	23	female	sceptical	Peroni
Respondent 15 (R15)	23	female	sceptical	Peroni
Respondent 16 (R16)	24	female	sceptical	Peroni
Respondent 17 (R17)	23	female	sceptical	Cinecittà Studios
Respondent 18 (R18)	25	male	sceptical	Cinecittà Studios

Source: our elaboration

Tab. A2 Constructs' reliability

Constructs	Cronbach's alpha
Brand authenticity dimensions	
Quality commitment	.933
Heritage	.901
Sincerity	.793
Originality	.867
Reliability	.889
Brand related constructs	
Brand image	.734
Brand trust	.783
Premium price	.793

Source: our elaboration

Le piattaforme degli Intermediari di Open Innovation a supporto della value co-creation: un confronto tra la Service-Dominant Logic e la prospettiva strategica[♦]

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Abstract

Obiettivo. *L'articolo intende confrontare le caratteristiche, gli strumenti e le regole delle piattaforme, soprattutto digitali, gemmati all'interno delle due più conosciute prospettive dedicate alla co-creazione di valore (Service-Dominant Logic e prospettiva strategica). Il confronto permetterà l'analisi delle piattaforme degli Open Innovation Intermediaries per comprendere se e come questi possano supportare le imprese nei processi di co-creazione.*

Metodologia. *Il lavoro, di matrice teorica, si basa su una review della letteratura.*

Risultati. *Il confronto tra le service platforms (Service-Dominant Logic) e le engagement platforms (prospettiva strategica) nella lettura delle piattaforme degli intermediari consente di delinearne caratteristiche, limiti e di "avvicinare" alla co-creation, sviluppata nell'ambito del marketing, i processi Open Innovation bidirectional coupled nei mercati B2B, relegando quelli interactional coupled nei mercati B2B e B2C, confermando questi come unici processi possibili nell'ambito della prospettiva strategica della co-creazione di valore.*

Limiti della ricerca. *Il lavoro presenta i limiti dello studio teorico, non ancora supportato da validazione empirica.*

Implicazioni pratiche. *Sotto il profilo manageriale, il lavoro rappresenta il primo tentativo di operazionalizzare il rapporto tra due paradigmi emergenti nell'ambito del management, la co-creazione di valore e l'Open Innovation, a fronte della necessità delle imprese di adottare nuovi business model di successo che non si escludano a vicenda, ma creino sinergie. Sotto il profilo teorico, esso consente di rilevare alcuni gap in letteratura ed aiuta a legare tra di loro approcci diversi.*

Originalità del lavoro. *Il confronto tra le due prospettive di value co-creation qui proposto non è stato ancora affrontato in letteratura, ancor meno lo è sotto il profilo degli strumenti necessari alle imprese per co-creare valore. Inoltre, il rapporto tra value co-creation ed Open Innovation non emerge ancora chiaramente, rimanendo nell'ombra il ruolo degli Open Innovation Intermediaries nell'ambito della value co-creation; tema centrale di questo paper.*

Parole chiave: *co-creazione di valore; prospettiva strategica; Service-Dominant Logic; Open Innovation; Open Innovation Intermediaries; service platforms; engagement platforms.*

Objectives: *The aim of the paper is to compare characteristics, tools and rules of platforms, above all digital ones, which are fundamental to the two most well known perspectives of value co-creation (Service-Dominant Logic and strategic perspective). The comparison will allow an analysis of Open Innovation Intermediary platforms in order to understand if and how they support firms in co-creation processes.*

Methodology. *This fundamentally theoretical study is based on the review of relevant literature.*

Findings. *The comparison between service platforms (Service-Dominant Logic) and engagement platforms (strategic perspective) helps the study of intermediary platform literature and provides an outline of their characteristics, limits as well as a bridge towards co-creation. Following a marketing perspective, bidirectional coupled Open Innovation processes are more suitable for B2C markets, they are replaced by coupled interactional processes in B2B markets. The latter are the only processes encompassed in the strategic perspective of value co-creation.*

Research limits. *This study has the limitations of a theoretical study which as yet has not been validated by an empirical study.*

Practical implication. *From a managerial point of view, this study is an initial attempt to operationalize the relationship between two emergent paradigms within management, value co-creation and Open Innovation, given the firm's necessity to adopt successful new business models which do not exclude each other but create synergies. From a theoretical point of view, it begins to fill the existing gap in literature and helps link different approaches.*

Originality of the study. *The comparison between the two perspectives of value co-creation proposed here has not yet been dealt with in literature, or rather even less regarding tools necessary for value co-creation. Besides, the relationship between value co-creation and open innovation is not yet clear, with the role of Open Innovation Intermediaries remaining unexplored in the field of value co-creation, which is the main subject of this paper.*

Keywords: *value co-creation; strategic perspective; Service-Dominant Logic; Open Innovation; Open Innovation Intermediaries; service platforms; engagement platforms.*

[♦] Pur essendo il lavoro frutto delle riflessioni comuni degli autori, sono da attribuire a Barbara Aquilani i paragrafi: 3 e 5; a Tindara Abbate il paragrafo 2; il paragrafo 1 è stato redatto congiuntamente dai precedenti autori; il paragrafo 4 a Tindara Abbate e Augusto D'Amico; il paragrafo 6 a Corrado Gatti.

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1. Introduzione

L'economia digitale, smaterializzata ed effervescente, crea valore ricorrendo all'utilizzo di bit informatici che si muovono velocemente sulla rete Internet, modificando, plasmando, sviluppando e definendo un mondo fatto di alta interconnessione, interdipendenza ed immaterialità, di nuovi significati e di complesse relazioni, di forti emozioni ed aspettative su un futuro possibile (Rullani, 2014, p. 142). Essa ha innescato un intenso processo di sviluppo e di trasformazione dell'economia tradizionale che ha spinto le imprese alla ridefinizione e/o all'individuazione di nuove traiettorie e di nuovi modi con cui devono e possono fare *business* e, per tale via, generare valore per i loro clienti in un orizzonte di lungo periodo. Pertanto, le imprese sono portate ad indirizzare i propri sforzi verso nuove impostazioni di crescita per affrontare l'insorgere di nuovi meccanismi/schemi competitivi e di ecosistemi di innovazione tracciati dalla rivoluzione digitale che richiede la predisposizione di un'intelligenza innovativa nella produzione di beni e servizi, oltre alla capacità di attivare e mantenere relazioni con una molteplicità di attori diversi, al fine di attrarre, acquisire e condividere conoscenze e competenze complesse.

In questo scenario di trasformazione, si ravvisa la necessità di avvalersi di un "terziario esterno", rappresentato da imprese che "vengono coinvolt[e] nelle attività di innovazione e di immaginazione del futuro possibile, o che forniscono servizi ad alto valore aggiunto necessari alla trasformazione in corso" (Rullani, 2013), che vanno, ad esempio, da "la formazione del capitale umano […]; al presidio delle nuove tecnologie e dei nuovi mercati; […] alla fornitura di conoscenze e servizi personalizzati che aiutano i clienti ad affrontare le situazioni nuove con cui hanno quotidianamente a che fare" (Rullani, 2014, p. 4). Più specificatamente, si tratta di nuove forme organizzative che offrono una grande varietà di servizi, muovendo da quelli più strettamente informatici, organizzativi, manageriali, creativi, a quelli formativi con il precipuo obiettivo di stimolare, facilitare e supportare le imprese che devono interpretare e rispondere alle sfide inedite dell'era digitale che non solo appaiono di sempre più ampia portata e sfuggenti anche alla più fervida immaginazione, ma soprattutto impongono la definizione e la realizzazione di processi di innovazione che, più *open* e caratterizzati dalla efficace combinazione di conoscenze interne ed esterne all'impresa (Chesbrough, 2003), consentano di giungere alla formulazione di soluzioni differenziate per i mercati di sbocco.

Ed è proprio nell'ambito di queste nuove forme organizzative che trova appropriato collocamento l'intermediario di *Open Innovation* (Howells, 2006; Stewart e Hyysalo, 2008; Sieg *et al*., 2010; Ollila e Elmquist, 2011; Tran *et al*., 2011; Dell'Era e Verganti, 2013; Katzy *et al*., 2013; Ye e Kankahalli, 2013; Colombo *et al*., 2014; Aquilani *et al*., 2014; Aquilani *et al*., 2015b), capace non solo di stimolare, attivare e sostenere efficaci interazioni e connessioni tra le molteplici entità esterne all'impresa nell'acquisita consapevolezza che il "*network of relationships between firm and its external environment can play an important role in shaping performance*" (Laursen e Salter, 2006, p. 132), ma soprattutto di supportare l'impresa nelle diverse fasi del processo di innovazione attraverso l'offerta di attività di formazione, consulenza specializzata ad ogni livello, servizi studiati *ad hoc*, ecc., ponendosi come "propulsore essenziale dell'innovazione" (Rullani, 2014, p. 4)[1]. Interessanti esempi di intermediari dell'innovazione sono NineSigma, Innocentive, IdeaConnection, Yourencore, Yet2.com (Abbate et al., 2013), Mercatodellinnovazione.it (Aquilani et al., 2014) che hanno contribuito all'affermazione ed alla diffusione dell'*Open Innovation* nei differenti settori e nei differenti ambiti di attività.

Gli intermediari di *Open Innovation*, caratteristici dei mercati dell'innovazione, con le loro avanzate piattaforme digitali, devono necessariamente considerare l'esigenza dell'impresa di creare

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[1] A questo proposito appare interessante notare come gli *Open Innovation Intermediaries* possano supportare l'impresa nel superare le barriere culturali che talvolta la "intrappolano" entro i propri confini come, ad esempio, rilevato di recente da Aquilani *et al.* (2015a).

valore in modi diversi rispetto al passato, ovvero di co-creare valore non solo con i consumatori, ma anche con altri attori che connotano il contesto di riferimento[2].

Sebbene il tema della co-creazione sia stato oggetto di investigazione secondo differenti prospettive[3], in questo contributo si è inteso focalizzare l'attenzione sulla proposta della *Service-Dominant Logic* formulata da Vargo e Lusch nel 2004 e sugli studi di strategia dedicati alla *value co-creation* (es. Prahalad e Ramaswamy, 2000, 2004a, 2004b, 2004c; Prahalad, 2004; Ramaswamy e Ozcan, 2014). Tale scelta è giustificata dal fatto che, in entrambi gli approcci, il ruolo delle *service platforms* nella *Service-Dominant Logic* e delle *engament platforms* nella prospettiva strategica della *value co-creation* emerge con maggior chiarezza ed è fondamentale, e che la *prima prospettiva* vede il passaggio dalla logica del *value-in-exchange* a quelle del *value-in-use* e del *value-in-context* e "*suggests that service systems simultaneously access, adapt and integrate resources to create value for themselves and others, and that knowledge is the core source of all exchange*" (Vargo *et al.*, 2008, p. 151), dando un peso diverso allo scambio che non determina più *in toto* il valore co-creato; su questo incide infatti anche il contesto (es. Edvardsson *et al.*, 2011). Per questa via, l'approccio indicato va considerato in un'ottica micro, tipico dell'impresa, e la conoscenza assume un ruolo primario, sebbene la tecnologia rimanga fondamentale e non slegata dal cosiddetto "*knowledge*". Queste caratteristiche, riconducibili alla *Service-Dominant Logic*, la rendono di gran lunga la prospettiva di marketing più vicina alla prospettiva strategica della "*value co-creation*". Pertanto, nonostante la presenza di importanti differenze, esso rappresenta l'approccio più appropriato per avviare un confronto e per comprendere come gli *Open Innovation Intermediaries* possano supportare l'impresa nei processi di co-creazione.

Il legame tra *value co-creation* e *Open Innovation* sta muovendo di recente i primi timidi passi. Da un lato, sul fronte della *Service-Dominant logic*, si è tanto guardato al principale elemento che la lega all'*Open Innovation* (Paasi *et al.*, 2014) quanto a rileggerne le premesse nell'ambito del nuovo paradigma dell'innovazione (Cesaroni e Duque, 2013), dall'altro lato, Piller e West (2014), ad esempio, hanno approfondito il tema ricorrendo ai contributi della *user innovation*, guardando finalmente ai processi, fondamentali per meglio comprendere il possibile ruolo degli intermediari, ma usando un concetto "ampio" di *value co-creation*[4]. Rimangono, tuttavia, trascurati molti aspetti di questo rapporto, tra i quali: (i) l'assunzione di una sola prospettiva di *co-creation* e non di un concetto generale riformulato *ad hoc* per studiare il legame tra questa e l'*Open Innovation* (cfr. § 5.); (ii) il confronto tra prospettive di matrice diversa (*marketing* e *management*), ma avente ottica

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[2] Il concetto di creazione di valore, soprattutto negli ultimi dieci anni, ha subito un intenso processo di evoluzione fino alla definizione del concetto di co-creazione di valore che presuppone una diversa ed intensa collaborazione tra impresa e consumatore (Payne *et al.*, 2008) ed implica una contemporanea creazione di valore per gli attori che, a diverso titolo, partecipano ai processi dell'impresa. Questo passaggio rappresenta il risultato di un diverso comportamento/coinvolgimento/*empowerment* del consumatore che è diventato sempre più soggetto protagonista del complesso processo di creazione di valore (es. Prahalad e Ramaswamy, 2000; Normann, 2002; Gronroos, 2008; Ramaswamy, 2010; Gupta, 2014), rimandando all'impresa il precipuo compito di supportarlo e di sostenerlo con una valida proposta di risorse, beni e servizi che sempre più spesso prevedono l'intenso utilizzo delle nuove tecnologie digitali. D'altra parte, le nuove tecnologie facilitano e rendono oramai possibile l'apertura dei confini dell'impresa, l'inclusione di nuovi attori e la relativa acquisizione di nuovi input nello sviluppo di prodotti e servizi e soprattutto "*to respond speedily and appropriately, and across the boundaries of geography and time*" (Chesbrough, 2003, p. X) ai bisogni latenti/emergenti dei propri *target* di mercato.

[3] Nell'alveo degli studi di marketing sono emersi infatti, nel tempo, almeno altri due filoni di ricerca che fanno esplicito riferimento alla *co-creation*, ossia il marketing "*many-to-many*" ed il marketing cosiddetto "post-moderno" (Saarijärvi et al, 2013; Alves *et al.*, 2015), oltre ovviamente al *service management*, da distinguere dalla *Service-Dominant Logic* (Vargo *et al.*, 2008). Inoltre, meritano menzione, sempre con riguardo alla cosiddetta *co-creation*, i contributi che si possono agevolmente inquadrare nella prospettiva della *design logic* (Nenonen e Storbacka, 2010; Kohler *et al.*, 2011a) e, infine, quelli dedicati all'innovazione e più in particolare ai processi di sviluppo di nuovi prodotti (es. Sawhney *et al.*, 2003; Agrawal *et al.*, 2015).

[4] Il contributo in parola, gemmato all'interno della letteratura sull'*Open Innovation*, mette a confronto gli aspetti salienti di questo filone di ricerca con quelli della *user innovation* (es. 1998; 2005; 2010) e richiama il concetto di co-creazione di valore, senza fare esplicito riferimento ad un approccio piuttosto che ad un altro sul tema; per tale motivo si è detto che il contributo ha utilizzato un concetto "ampio" di *value co-creation*, proponendo poi una diversa definizione del medesimo (cfr. § 5.).

comune, quella dell'impresa, utile a fornire al *management* indicazioni circa la prospettiva più adatta per realizzare la *co-creation* nel perseguimento dei propri obiettivi; (iii) la disamina di come la *co-creation* possa essere realizzata adottando l'*Open Innovation* e, in questo ambito, quale ruolo possa assumere l'intermediario di *Open Innovation*.

Sono questi i *gap* in letteratura che si intende colmare con un piccolo tassello, investigando le piattaforme.

Dopo una breve *review* della letteratura di entrambe le prospettive utilizzate nel lavoro, soprattutto in relazione alle piattaforme che le stesse considerano importanti per la *value co-creation*, il *paper* richiamerà ruoli, funzioni e servizi degli *Open Innovation Intermediaries*, nonché le caratteristiche delle loro piattaforme, per poi discutere le stesse in base alle due prospettive qui selezionate. Nell'ultima sezione del lavoro, oltre alle riflessioni conclusive, sono rintracciabili le implicazioni teoriche e manageriali del lavoro, oltre i limiti propri di un lavoro puramente teorico, propedeutico ad un futuro approfondimento empirico.

2. Service-Dominant Logic: assunti base e caratteristiche delle service platforms

La proposta della *Service-Dominant Logic* avanzata da Vargo e Lusch (2004), palesando una chiara transizione dalla logica *Good-Dominant* (GD) verso una nuova filosofia o "*mind-set*", poggia le proprie basi sull'idea che il "*marketing has shifted much of its dominant logic away from the exchange of tangible goods and towards the exchange of intangibles, specialised skills and knowledge, and processes*" (p. 2). Essa attesta una diversa concezione del servizio, definito non più come una semplice tipologia di offerta, ma come "*the application of specialized competences (operant resources-knowledge and skills), through deeds, processes, and performances for the benefit of another entity or the entity itself*" (Vargo e Lusch, 2008, p. 26). Le *operant resources* (abilità, conoscenze, competenze, informazioni e relazioni) sono considerate risorse dinamiche ed intangibili tipicamente umane, organizzative e relazionali, che accrescono il valore delle *operand resources*, solitamente statiche e tangibili, e generano altre *operant resources*.

Superata la tradizionale dicotomia tra beni (tangibili) e servizi (intangibili) e la consolidata concezione dei servizi come categoria residuale e marginale rispetto ai beni (Rathmell, 1966) o come semplice arricchimento della proposta di offerta dell'impresa (Lovelock, 1994), il "servizio" diventa l'unico oggetto della relazione di scambio, indipendentemente dal fatto che lo stesso servizio sia reso mediante beni in cui sono incorporate abilità, competenze e conoscenze o tramite un insieme di processi e di attività (Vargo e Lusch, 2004). I principi della *service-centered view* trovano valida ed efficace sintesi nei cinque assiomi e nelle 11 *Foundational Premises* (FP) della *Service-Dominant Logic*, così come aggiornati di recente e presentati in Tabella 1[5]. Essi ruotano attorno al concetto di servizio, quale elemento basilare di tutti gli scambi di mercato (FP1), alla rilevanza delle *operant resources*, quale principale fonte del vantaggio competitivo (FP4), e alla co-creazione di valore, quale processo di integrazione e di trasformazione delle risorse rispetto al quale tutti gli attori ricoprono il ruolo di integratori di risorse (FP.9) (Vargo e Lusch, 2004; 2008; 2016; Lusch e Vargo, 2014).

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[5] In una serie di scritti successivi al contributo seminale, Vargo e Lusch hanno inteso modificare ed integrare la propria proposta; pertanto, le premesse, che inizialmente erano 8 sono state in parte modificate ed ampliate. Difatti, nella versione più recente sono diventate 11 (Vargo e Lusch, 2016), cercando di rilevare e di specificare i meccanismi di coordinamento e di cooperazione necessari per l'attività di co-creazione.

Tab. 1: Le 11 premesse e gli assiomi della Service-Dominant Logic

FP	Assiomi	Premesse	Spiegazione e commento
1	1	Il servizio è la base fondamentale dello scambio.	L'applicazione di risorse *operant*, conoscenze e competenze specializzate (il "servizio" nella *Service-Dominant Logic*) è la base di ogni scambio. Il servizio è scambiato con servizio.
2		Lo scambio indiretto maschera la base fondamentale dello scambio.	Il servizio è infatti fornito attraverso combinazioni di risorse. Il servizio alla base dello scambio non è sempre apparente.
3		I beni sono un meccanismo di distribuzione per la fornitura del servizio.	I beni, durevoli e non, derivano il loro valore dall'uso, ossia il servizio che essi forniscono.
4		Le *operant resources* sono le fondamentali fonti del vantaggio competitivo.	L'abilità comparativa nel determinare il cambiamento guida la competizione.
5		Tutte le economie sono economie di servizio.	Il servizio (al singolare) sta divenendo adesso più apparente per effetto dell'accresciuta specializzazione e dell'*outsourcing*.
6	2	Il valore è co-creato da molteplici attori, includendo spesso il beneficiario.	La co-creazione di valore è interazionale.
7		Gli attori non possono consegnare valore, ma possono partecipare alla creazione ed offrire proposizioni di valore.	Le imprese possono offrire le proprie risorse per la creazione di valore e collaborativamente (in modo interattivo) creare valore a seguito dell'accettazione della proposta di valore, ma non possono creare e/o consegnare valore indipendentemente.
8		La visione centrata sul servizio è intrinsecamente orientata al cliente ed é relazionale.	Poiché il servizio è definito in termini di benefici determinati dal cliente ed è co-creato, è intrinsecamente orientato al cliente e relazionale.
9	3	Tutti gli attori economici e sociali sono integratori di risorse.	Il contesto per la creazione di valore è la rete delle reti (integratori di risorse).
10	4	Il valore è sempre unicamente e fenomenologicamente determinato dal beneficiario.	Il valore è idiosincratico, esperienziale, contestuale e carico di significato.
11	5	La co-creazione di valore è coordinata attraverso istituzioni "*actor-generated*" e accordi istituzionali.	Affinché la co-creazione di valore possa realizzarsi è necessario un insieme di regole, norme, ecc.; le stesse necessarie per regolare i sistemi umani e le attività sociali.

Fonte: ns. elaborazione da Vargo e Lusch, 2008, 2016; Lusch e Vargo, 2014.

In questa nuova proposta, la creazione di valore non può essere ricondotta alle mere iniziative dell'impresa produttrice/erogatrice poiché essa può soltanto generare proposizioni di valore che il cliente-utente con la propria attività, al limite con l'utilizzo di risorse messe a disposizione dall'impresa o con le stesse proposizioni, ne definisce il valore. Ciò implica che il cliente-utente diventa non solo co-produttore del servizio, ma soprattutto partecipa e contribuisce diffusamente alla creazione di valore che può assumere quattro differenti livelli: co-creazione dell'offerta del servizio; co-creazione della proposizione di valore; co-creazione dei processi e dei *network* per la creazione di valore; co-creazione di conversazione e dialogo (Lusch e Vargo, 2006). Ad ogni modo, a prescindere dai livelli appena richiamati, il valore è co-creato all'interno di un rapporto tra impresa e cliente che si estende nel lungo periodo, confermando che la prospettiva di valore, assunta dalla *Service-Dominant Logic*, è indirizzata verso il superamento dei singoli episodi legati alla semplice transazione e degli scambi che si realizzano tra domanda e offerta, ma si colloca lungo un arco temporale piuttosto esteso, dove i clienti assumono la veste di *value creators* e l'impresa ricopre il ruolo di *value facilitator* (Grönroos, 2008). D'altro canto, il concetto di valore è oggetto di una costante modificazione: dal valore di scambio al "*value in use*" (Vargo e Lusch, 2004) fino a, più di recente, il "*value-in context*" (Chandler e Vargo, 2011) ed il "*value in social-context*" (Edvardsson *et al*., 2011). Pertanto, impresa e cliente possono esssere considerati attori in un *actor-to-actor network* (A2A) trovandosi ad operare "*within structure that as social rules (institutional norms) and collective meanings that constrain or limit their agency, and at the same time, they create value for themselves and others*" (Lusch e Nambisan, 2015, p. 161). Nell'ambito di questo A2A *network* è possibile contemplare alcuni "*inanimate agents*" (Lusch e Nambisan, 2015, p. 161), come i vari componenti, anche digitali, delle piattaforme di servizio che facilitano l'interazione tra gli attori e le risorse o il *bundle* di risorse e supportano lo scambio di servizio, sebbene siano soggette alla definizione ed alla implementazione di regole, standards e/o di protocolli (taluni anche normativi) per consentire, validare e verificare lo scambio diretto ed indiretto tra gli stessi attori. Ed in questo contesto, tali piattaforme esibiscono caratteristiche piuttosto significative: connettività attraverso cui collegare *set* di nuovi attori unitamente alle loro competenze ed ai loro scambi di

servizio; facilità di ricerca e di identificazione della *value proposition* più appropriata in funzione delle richieste degli attori coinvolti nello scambio di servizio; interattività tra gli attori e le risorse; e meccanismi a supporto della comunicazione di tipo formale ed informale (*social media*, *blogs*, *wikis*, *forum* e *community*) (Lusch e Nambisan, 2015).

3. Il paradigma della value co-creation: aspetti salienti e "piattaforme di coinvolgimento"

Il filone della letteratura di *management* dedicato alla *value co-creation* deve la propria nascita ai contributi seminali di Prahalad e Ramaswamy (es. Prahalad, 2004; Prahalad e Ramaswamy, 2004a; 2004b; 2004c; Ramaswamy, 2009a) che via via nel tempo hanno portato, anche grazie al contributo di molti altri autori (es. Gouillart, 2014; Ramaswamy e Gouillart, 2010a; 2010b; 2012), al paradigma della co-creazione di valore (Ramaswamy e Ozcan, 2014).

Secondo questa prospettiva, le definizioni della *value co-creation* sono numerose, sebbene forse la più completa ed in grado di riassumere l'essenza di questo paradigma, soprattutto dato l'obiettivo del presente lavoro, sia la seguente: "*the co-creation view starts with interactions as the locus of value and platforms of engagements with individuals are the locus of value creation, and co-creative enterprises follow a single principle: they focus their entire organization on the engagements with individuals*" (Leavy, 2014, p. 11). In questa definizione appare chiaro come le "piattaforme di coinvolgimento", che saranno discusse dopo una premessa generale dell'intero paradigma, svolgano un ruolo centrale per la *value co-creation* e, come si avrà modo di argomentare, rappresentino il terzo elemento fondante di questo paradigma. In effetti, la stessa definizione inquadra la *value co-creation* come incentrata sulle interazioni tra individui (Ramaswamy, 2011) da intendere come "*forums for reflexive learning and ever-expanding capability building*" (Leavy, 2014, p. 13)[6].

Secondo questo approccio il valore è funzione delle esperienze o meglio il valore è intriso nelle esperienze "dialogiche, trasparenti, accessibili e riflessive" di tutti gli *stakeholders*[7]. Appare chiaro come la cattura del valore non sia più appannaggio esclusivo dell'impresa, ma sia da "mettere in atto", anche se in misura e natura talvolta diversa, da parte di ognuno dei partecipanti alla sua co-creazione[8]. Di conseguenza, la *tagline*, coniata dagli studiosi per questo paradigma, é "*win more-win more*", a suggellare che non solo tutti i partecipanti alla co-creazione di valore si appropriano di una parte del valore generato insieme, ma che tale appropriazione avviene in maniera continua (Ramswamy e Ozcan, 2014), considerato che "*co-creation is both the means and the end, in a continuous cycle*" (Ramaswamy e Gouillart, 2010, p. 29). Per chiarire quanto in parola, appare opportuno sottolineare che, in realtà, esistono due condizioni affinché si possa addivenire, secondo la prospettiva analizzata, alla co-creazione di valore, ossia che l'individuo ricopra un ruolo attivo nella co-creazione di valore, criterio individuato nel paradigma della "riconfigurazione dei sistemi di creazione del valore" (Normann, 2002), successivamente ripreso da Prahalad e Ramaswamy (2000), e che dalla sua partecipazione ne derivi un qualche beneficio reale, come sottolineano Saarijärvi *et al.* (2013)[9]. In mancanza di entrambe le condizioni si ricade nelle logiche

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[6] In questo passaggio è chiaro il riferimento alla generazione di sempre nuove capacità nell'ambito degli ecosistemi a cui è anche riconducibile una delle definizioni della co-creazione di valore, ossia: "*co-creation is creating value based on experiences through engagement platforms that expand ecosystems*", considerato che le "piattaforme di coinvolgimento" possono evolversi "*everywhere in the enterprise ecosystem*" (Ramaswamy e Ozcan, 2014, p. 12 e ss).

[7] Questo chiarimento circa il valore nel paradigma in parola è rintracciabile nel blog dello stesso Ramaswamy insieme ad altre puntualizzazioni sulla *value co-creation* secondo l'approccio strategico nel contributo dal titolo "Co-creation" (http://www.venkatramaswamy.com/ccthinking.html, consultato il 30 maggio 2015).

[8] Un'analisi interessante e puntuale della creazione e della cattura del valore nei paradigmi dominanti del *management* è rintracciabile in Dagnino e Mocciaro Li Destri (2011).

[9] A questo proposito sarà poi necessario che l'impresa presti particolare attenzione alla progettazione dei benefici di volta in volta più adatti ai diversi partecipanti, anche a seconda del ruolo che questi sono chiamati a ricoprire e delle risorse che gli stessi intendono rilasciare per co-creare valore. Per un rapido riferimento alla tipologia di benefici ed

dell'appropriazione di valore da parte della sola impresa che, ad esempio, caratterizzano il paradigma Struttura-Condotta-Performance ed anche la *Resource-Based View of the Firm* se non correttamente interpretata in senso dinamico (Mocciaro Li Destri e Dagnino, 2005).

Se il cosiddetto "spazio delle esperienze", appena richiamato, rappresenta il primo cardine di questo paradigma, il secondo è quello delle "piattaforme di coinvolgimento", legate a doppio filo al precedente, ma anche al terzo, ossia gli "ecosistemi di capacità"[10].

Le "piattaforme di coinvolgimento" possono essere definite come "*an assemblage of persons, processes, interfaces, and artifacts, whose engagement design affords environments of interactions that intensify agential actions in value creation*" (Ramaswamy e Ozcan, 2014, p. 34). In questo senso, le piattaforme, costituite da elementi anche molto diversi tra di loro, devono assicurare che le interazioni tra individui possano avvenire quanto più agevolmente possibile e devono essere progettate al fine di rendere compatibili e complementari questi elementi. Le "piattaforme di coinvolgimento" assurgono a *locus* della co-creazione di valore perché come affermano Ramaswamy e Gouillart (2012) anche se le idee sono fondamentali è necessario che queste siano "alimentate" da contributi tra i più diversi, affinché l'impresa rimanga "legata" agli individui che co-creano valore ed il processo possa perdurare nel tempo. Del resto, la co-creazione di valore deve andare ad investire non soltanto piccole aree o funzioni aziendali come l'innovazione, ad esempio, ma tutta l'impresa, "aprendo le porte" a contributi esterni circa i suoi obiettivi, la sua organizzazione, ma anche le nuove "piattaforme di coinvolgimento" da utilizzare per continuare a co-creare valore. Ed è proprio da quest'apertura di diversa portata che l'approccio alla co-creazione di valore prende l'appellativo di "strategico". Infatti, le interazioni che si realizzano nelle "piattaforme di coinvolgimento" sono a diversi livelli: i) *value offerings*; ii) miglioramento/creazione di "piattaforme di coinvolgimento"; iii) ampliamento di "ecosistema di capacità"; iv) supporto/miglioramento/progettazione/riprogettazione di aspetti strategici organizzativi (Leavy, 2013).

Le "piattaforme di coinvolgimento", invero, possono avere natura diversa nel senso che in letteratura si è fatto riferimento a diversi strumenti digitali e non per identificare il *locus* della co-creazione di valore. Tra i primi è possibile annoverare siti web, *apps* per i telefoni portatili, spazi *online* di *communities* variamente strutturati (*blog*, *social websites*, ecc.), *social media* (Berman e Korsten, 2014) e i cosiddetti "mondi virtuali" (Kohler *et al.*, 2011a; 2011b), mentre tra i secondi è possibile menzionare riunioni tradizionali, superfici di vendita appositamente progettate e gestite (es. punti vendita Apple), *temporary shops* (Russo Spena *et al.*, 2012), eventi, se pensati a questo scopo, *call centers*, se attenti nella raccolta di informazioni e *feedback* da parte dei clienti, come ogni altro momento di incontro e interazione (Leavy, 2013; Ramaswamy e Ozcan, 2014).

I principi base che dovrebbero essere seguiti nel progettare le "piattaforme di coinvolgimento" sono quattro, racchiusi nell'acronimo CIIT (*Creativity, Intentionality, Integrativity, Trasformativity*) (Ramaswamy e Ozcan, 2014). La creatività appare fondamentale nel progettare le "piattaforme di coinvolgimento" perché questi strumenti devono supportare interazioni efficaci, ma anche in continuo e sempre nuovo divenire, soprattutto considerando che secondo il paradigma della co-creazione di valore "*markets [...] arise from a nexus of differences*" (Ramaswamy e Ozcan, 2014, p. 39) o possono essere intesi come "*forum for co-creation experiences*" (Prahalad e Ramaswamy, 2004c, p. 13) e l'intento dell'impresa nell'era moderna non è solo quello di competere nei mercati attuali, ma di crearne di nuovi, all'origine del proprio successo e necessariamente basati sulla propria capacità creativa (Pitelis e Teece, 2009). L'intenzionalità dell'individuo è quella che,

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alla loro *ratio*, nell'ambito dell'*Open Innovation*, è possibile consultare Antikainen *et al.* (2010) e Antikainen (2011), mentre per i ruoli e le risorse che i consumatori, in particolare, potrebbero, rispettivamente, ricoprire e rilasciare, si consiglia la lettura del recente contributo di Agrawal e Rahman (2015).

[10] Pur non essendo questo il *focus* del presente contributo appare opportuno, per completezza, fornire almeno una definizione di "spazio delle esperienze" tratta da Ramaswamy e Ozcan (2014, p. 53): "a*n experience domain is a stratum of individual involvement, events, contexts, and meaning, whose configuration of experiences embodies actualized outcomes in value creation. Experience domains span environments of interactions afforded by engagement platforms*".

all'interno delle "piattaforme di coinvolgimento", deve essere tutelata da parte dell'impresa, facilitatore delle interazioni, per tutti coloro che partecipano alla co-creazione di valore, permettendo agli individui che interagiscono di seguire un proprio percorso, determinare un proprio obiettivo e gestire le interpendenze che nascono da queste attività (Ramaswamy e Ozcan, 2014). L'integratività, parola coniata *ad hoc* per questo paradigma, è un concetto importante in quanto guarda alla capacità delle "piattaforme di coinvolgimento" di supportare il flusso delle informazioni che nelle stesse accedono, avendo come obiettivo il miglioramento della comunicazione, della cooperazione e del coordinamento dei diversi attori, affinché si arrivi ad un unico sistema capace di muoversi compatto ed in cui la produttività, la flessibilità e la reattività rispetto ad ogni stimolo raggiunga i massimi livelli possibili (libera traduzione dell'autore da Ramaswamy e Ozcan, 2014, p. 40). La trasformatività, termine anch'esso originale del paradigma in parola, "*is about differentiating and connecting forces, spatially and temporally, as a source of creation of meaning and value and manifested as new affectivity*" (Ramaswamy e Ozcan, 2014, p. 41). Quest'ultimo criterio per la progettazione delle "piattaforme di coinvolgimento" risponde all'esigenza di cambiare "la forma del valore", ma anche "le relazioni, le decisioni, le idee e le offerte" di tutti i partecipanti alla co-creazione, affinché ognuno possa catturare per sé il valore desiderato nella forma voluta e nel tempo/spazio più opportuni, sempre, ottenendo così la ricompensa attesa per la partecipazione al processo di co-creazione (Ramaswamy e Ozcan, 2014, p. 41). In realtà, a ben guardare i quattro criteri descritti brevemente, sembra che i primi tre non siano altro che la necessaria premessa per la realizzazione della "*trasformativity*".

A fronte di questi principi chiave di progettazione, è necessario che lo "spazio delle esperienze" prenda vita nelle "piattaforme di coinvolgimento" e che si avviino in maniera concreta quelle interazioni che rappresentano il *locus* del valore. Questo è possibile grazie ai principi del cosiddetto DART – *Dialogue, Access, Risk-reward assessment o Reflexivity, Trasparency* (Ramaswamy, 2009a; 2009b; Ramaswamy e Ozcan, 2014)[11]. Il dialogo da creare e mantenere sempre vivace è da intendere non semplicemente come attività di "ascolto", a cui possono far seguito attività per migliorare la soddisfazione del cliente, ma come coinvolgimento degli individui così come desiderano, seguendo le loro regole e rispettando i loro termini in modo che si possano co-costruire quelle esperienze di valore che meglio si adattano al contesto, in continuo divenire, di chi partecipa (Ramaswamy, 2009b)[12]. L' "accesso" identifica la possibilità per ogni partecipante di raccogliere capacità, esperienze e creatività messe a disposizione dagli altri, per poter liberamente modellare, di volta in volta, la propria esperienza anche grazie alla tecnologia che oggi, molto più che in passato, fornisce un supporto fondamentale affinché questo avvenga in maniera rapida ed agevole (Ramaswamy, 2009b; Ramaswamy e Ozcan, 2014). Il cosiddetto "*risk-reward assessment*" riguarda la necessità che tutti gli attori, non solo l'impresa, abbiano la possibilità, attraverso una grande mole di informazioni, talvolta da richiedere appositamente, di fare un confronto tra i benefici che derivano dalla loro partecipazione, ad esempio, alla creazione di un nuovo prodotto, e gli immancabili rischi che a questa attività sono connessi (es. divulgazione idee originali) (Ramaswamy, 2009a; 2009b). La cosiddetta "*reflexivity*" invece, coniata più di recente, pur inglobando il concetto precedente e sottolineando l'importanza dell'informazione condivisa, delle raccomandazioni e degli strumenti necessari affinché lo "spazio delle esperienze" rimanga "vivace", pone l'accento sulla esigenza che si realizzi un'influenza reciproca di tutto ciò che avviene tra alcuni individui all'interno della piattaforma in tutte le interazioni successive, con un impatto, se del caso, sulla modalità con cui l'impresa ha interpretato i criteri di progettazione della "piattaforma di

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[11] La «R» dell'acronimo DART, nel tempo ha cambiato il suo significato passando da "*Risk*", rintracciabile ad esempio nei contributi di Ramaswamy (2009a; 2009b), a "*Reflexivity*" (Ramaswamy e Ozcan, 2014).

[12] La definizione qui riportata è una libera traduzione dell'autore del contributo di Ramaswamy (2009b, p. 32) che afferma "*nurtuting active and ongoing dialog is about engaging customers on their terms and allowing them to co-construct the experience to suit their own context*". Mentre é chiaro al riferimento ad un mercato che può agevolmente essere inteso come un *set* di conversazioni tra il consumatore e l'impresa (Levine *et al*., 2001).

coinvolgimento" stessa (Ramaswamy e Ozcan, 2014)[13] (es. *best practices* su come prendere decisioni condivise - criterio della "*transformativity*"). La "trasparenza", l'ultimo dei principi del DART, riguarda tanto le informazioni quanto le interazioni che presuppongono un elevato grado di fiducia tra gli individui che interagiscono sulla piattaforma, a sua volta alimentata dalla libera circolazione delle informazioni e da una grande apertura che contempla ogni stadio ed ogni momento dei processi di co-creazione (Ramaswamy e Ozcan, 2014)[14].

Descritti i criteri di progettazione ed i principi di funzionamento delle "piattaforme di coinvolgimento", appare necessario fare un cenno agli "ecosistemi di capacità" che rappresentano il terzo pilastro del paradigma, intimamente connesso a quello appena discusso. Infatti, volendo reinterpretare l'impresa alla luce di quanto fin qui detto a proposito della *value co-creation*, questa potrebbe essere intesa come un "nesso di piattaforme di coinvolgimento", mentre il contesto e l'intero ambiente in cui si muove potrebbe essere definito come un "*nexus of private-public-social sector enterprise ecosystems of capabilities*" (Leavy, 2014, p. 12; Ramaswamy e Ozcan, 2014). L'"ecosistema di capacità" in cui è immersa l'impresa, da un lato, le offre, l'opportunità di alimentare i suoi processi di co-creazione, dall'altro, le chiede di facilitarli, attivarli, creare nuove "piattaforme di coinvolgimento" che possano ampliarlo e magari connetterlo con altri "ecosistemi di capacità". Esso può essere definito come "*a meshwork of social, business, civic, and natural communities, whose leveraging of capabilities virtualized agential capacities in value creation*" (Ramaswamy e Ozcan, 2014, p. 83), facendo così emergere i suoi tratti caratteristici: (i) capacità sviluppate a livello di ecosistema e non già solo di singola impresa; (ii) attore chiave che non ha necessità di essere definito a priori, potendo un processo di co-creazione prendere avvio all'interno di una *community*; (iii) irrilevanza della distanza geografica.

Il quadro appena delineato del paradigma della *value co-creation*, con un'attenzione tutta particolare alle "piattaforme di coinvolgimento", apre la via al confronto con la già descritta *Service-Dominant Logic*, non prima però di aver inquadrato e descritto nei loro tratti salienti gli intermediari di *Open Innovation*.

4. Gli intermediari di Open Innovation: ruoli, funzioni, servizi e piattaforme

Gli Intermediari di *Open Innovation* possono essere considerati come "*an organization or body that acts [as] an agent or broker in any aspect of the innovation process between two or more parties. Such intermediary activities include: helping to provide information about potential collaborators; brokering a transaction between two or more parties; acting as a mediator, or go-between, bodies or organizations that are already collaborating; and helping find advice, funding and support for the innovation outcomes of such collaborations*" (Howells, 2006, p. 720). Con il precipuo intento di facilitare l'interazione, la partecipazione, la collaborazione e soprattutto la costruzione di efficaci e durature relazioni tra i diversi attori coinvolti nei nuovi percorsi di innovazione, gli intermediari definiscono e svolgono funzioni assai rivelanti e complesse nell'ambito dei processi di innovazione, contemplando sia le diverse fasi dei processi di sviluppo dell'innovazione, dalla effettiva generazione e/o dallo sviluppo dell'idea, derivante molto spesso dall'integrazione e dalla combinazione delle diverse fonti di conoscenza interne con quelle esterne all'impresa (consumatori, fornitori, università, centri di ricerca, esperti, *communities*, ecc.), sia le

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[13] A questo proposito appare interessante sottolineare come, secondo l'approccio strategico della *value co-creation*, sia necessario considerare il rischio come parte integrante della *co-creative enterprise*; un tema interessante, ma che ha mosso da poco tempo i suoi primi passi. Cfr. Frigo e Ramaswamy (2009); Frigo *et al.*, (2012); Læssøe, Ramaswamy e Frigo (2013).

[14] L'importante ruolo della fiducia per il successo dell'impresa è stato oggetto di molti studi tra cui ci sia concesso di ricordarne soltanto due di matrice italiana, ossia quelli di Vicari (1992; 1995), mentre nell'ambito della *value co-creation* questo tema è davvero poco trattato ed infatti sono rintracciabili pochissimi contributi, uno in particolare merita menzione in questo contesto perché sviluppato nell'ambito della *Service-Dominant Logic*, ossia quello di Randall *et al.* (2011).

attività di valorizzazione e di commercializzazione dei risultati ottenuti nell'ambito dei progetti di innovazione, quale espressione concreta ed efficace delle differenti forme di collaborazione attivate tra le parti coinvolte. Più specificatamente, Howells (2006) rappresenta così le principali funzioni degli intermediari dell'innovazione: (1) identificazione di conoscenza e di tecnologia per rispondere e risolvere problemi di eterogenea natura manifestati da coloro che avviano o hanno avviato processi di innovazione (*innovation seekers*); (2) raccolta di informazioni utili per l'individuazione di potenziali collaboratori e/o *partners*, provvedendo al necessario sostegno nella complessa attività di selezione del collaboratore/*partner* idoneo alle specifiche esigenze; (3) generazione, integrazione e combinazione di conoscenza detenuta da *solvers* globalmente localizzati; (4) intermediazione nell'ambito di negoziazioni e di transazioni, prevedendo e supportando la fase di formalizzazione di accordi di collaborazione tra le parti interessate; (5) attività di intermediazione per imprese che hanno già avviato collaborazioni/alleanze/*partnerships*; (6) supporto nelle attività di protezione della proprietà intellettuale e *scouting* delle opportunità di mercato più profittevoli (Howells, 2006). Differentemente, Lopez e Vanhaverbeke (2009) classificano le funzioni degli intermediari in tre distinte categorie: (1) attività di supporto allo sviluppo di collaborazioni per la generazione di risultati innovativi per il mercato; (2) attività di collegamento tra attori diversi che hanno sempre una dimensione globale; (3) servizi tecnologici che possono facilitare, accelerare e sostenere i processi di innovazione. Ad ogni modo, i nuovi intermediari dell'innovazione rendono un contributo effettivo all'attività di innovazione delle imprese, permettendo il raggiungimento di importanti benefici, tra i quali: diminuzione dei costi richiesti dai progetti di innovazione; riduzione del *time to market*; miglioramento delle attività interne di ricerca e sviluppo di nuovi prodotti, in grado di rispondere meglio alle necessità del mercato; creazione di connessioni e di *network* formali/informali per stimolare ed innescare meccanismi di cooperazione; individuazione e approfondimento di profittevoli opportunità di mercato (Hargadon e Duysters, 2002; Howells, 2006; Gassmann *et al*., 2010; Ollila e Elmquist, 2011; Ye e Kankahalli, 2013; Mele e Russo-Sperna, 2014).

A sostegno delle imprese che sono impegnate nella definizione, nell'organizzazione e nella gestione di progetti di innovazione aperta (Vanhaverbeke e Cloodt, 2014), gli intermediari definiscono e sviluppano un'ampia offerta di servizi (Aquilani e Abbate, 2013) che: i) permettono differenti modalità di gestione della connessione tra la rete degli innovatori e le imprese che manifestano richieste di risoluzione di specifici problemi; (ii) favoriscono i flussi di comunicazione tra i vari attori coinvolti nei progetti di innovazione; (iii) facilitano e sostengono tutte le fasi del processo di innovazione; (iv) assumono caratteri tecnici-tecnologici, ritenuti necessari per lo sviluppo dell'innovazione; (v) si concretizzano sovente in forma di consulenza su vari aspetti caratterizzanti l'attività dell'impresa (finanza, *marketing*, organizzazione, strategie di internazionalizzazione); (vi) agevolano la fase di commercializzazione dei diritti della proprietà intellettuale (IP).

Sotto il profilo meramente operativo, l'intermediario di *Open Innovation* crea, utilizza ed alimenta appropriate piattaforme *web-based*, che dotate in maniera distintiva di un variegato ventaglio di strumenti tecnologicamente avanzati (*forum, blog, social media*, ecc.) facilitano l'incontro, l'interazione, la collaborazione e lo scambio continuo tra i vari attori specificatamente coinvolti (*innovation seekers* con richieste definite e *solvers* con proposte di soluzione) (Bakici *et al*., 2012), oltre ad offrire una proposta di servizi variegata ed articolata che presuppone l'esistenza di un *continuum* tra standardizzazione e personalizzazione del servizio (Aquilani *et al*., 2016). Queste piattaforme, divenute ormai *locus of innovation* in una prospettiva di *problem solving*, esibiscono una serie di caratteristiche funzionali all'utilizzo (Aquilani e Abbate, 2013): collaborativa, diretta a facilitare il collegamento tra *seeker e solver* e la partecipazione di più *solvers* che spesso aderiscono attraverso meccanismi di *community* (Sawhney *et al*., 2003); interattiva, capace di agevolare lo scambio diretto ed immediato di contenuti tra *seekers* e *solvers*; connettiva/*network* (Hakanson *et al*., 2011); articolata (Verona *et al*., 2005); navigabile per facilitare la ricerca di informazioni attraverso parole chiave (Verona *et al*., 2005) o specifici filtri

per una rapida individuazione delle tematiche di interesse; e multimediale, prevedendo la dotazione di strumenti tipici del Web 2.0 utili per le relazioni tra i vari utenti (Lahkani, 2008).

5. Service platforms versus engagement platforms: il confronto guardando agli intermediari di Open Innovation

I due tipi di piattaforme, rispettivamente gemmati nell'ambito della *Service-Dominant Logic* e della *value co-creation*, rappresentano la base di confronto utilizzata per comprendere che ruolo possano avere gli intermediari di *Open Innovation* a supporto dell'impresa che intende avviare e concludere questi processi con successo.

Prima di procedere in tale direzione, appare opportuno sottolineare che, nell'ambito della *Service-Dominant Logic* sono stati rintracciati due soli contributi su rivista. Il primo, guardando, in realtà, tanto all'*user innovation* quanto all'*open innovation*, individua come elementi comuni tra questi e la *Service-Dominant Logic* il fatto di sottolineare la necessità di collaborare con i consumatori e di attribuire alla conoscenza un ruolo di primo piano nell'interazione (Paasi *et al.*, 2014). Il secondo lavoro, invece, interpreta le premesse dell'approccio di Vargo e Lusch nell'ambito dell'*Open Innovation*, non focalizzandosi però sui processi (Cesaroni e Duque, 2013), ambito specifico in cui si inserisce l'attività degli intermediari (cfr. § 4.). Pertanto, volendo guardare ai processi, l'unico riferimento, non così specifico, rintracciato dagli autori in letteratura è nella definizione di processo di *Open Innovation bidirectional coupled* che Piller e West (2014) traggono dal testo di Chesbrough (2011) dedicato ai servizi affermando che "*the innovation (or innovative knowledge) is created by whom, in how the processi is governed and how the returns can be appropriated*" (p. 38-39).

Nell'ambito della *value co-creation*, secondo una prospettiva strategica, invece, un legame tra questa e l'*Open Innovation* appare stabilito (es. Ramaswamy e Ozcan, 2014) ed è stato di recente approfondito, proprio guardando ai processi (Piller e West, 2014), disegnando un quadro meno generale, quindi più adatto allo studio del possibile ruolo degli intermediari di *Open Innovation*. Difatti, Ramaswamy e Ozcan (2014) chiariscono, come in realtà si possa addivenire a processi di co-creazione di valore, nell'ambito dell'*Open Innovation*, soltanto quando ad essere utilizzati siano i cosiddetti processi *coupled*, ossia quelli che vedono il contemporaneo dipanarsi di processi *inside-in* e *outside-in*, definiti da Enkel *et al*. (2009)[15]. In un contributo successivo, Piller e West (2014), concentrando l'attenzione sul rapporto tra co-creazione di valore, in senso generale, e *Open Innovation*, facendo ricorso anche agli studi sull'*user innovation*, distinguono all'interno dei processi tra "*bidirectional coupled*" e "*interactive coupled processes*", chiarendo che solo nei secondi può realizzarsi la cosiddetta *value co-creation*, sempre che la *co-creation* sia intesa come "*an active, creative, and collaborative process between a firm and individuals during a new product/service development process in which participants contribute to a task initiated and facilitated by the firm*" (p. 39).

In questa definizione si rintracciano differenze sostanziali tanto con la *Service-Dominant Logic* quanto con la *value co-creation*, secondo la prospettiva strategica. Nella *Service-Dominant Logic*, infatti, il *focus* non è sul rapporto tra impresa e individui, ma tra attori che interagiscono e collaborano, anche se poi sembra che a dover gestire le dinamiche e ad accogliere i contributi dei soli consumatori sia l'impresa, che sembra responsabile del coordinamento delle attività (vedi Tabella n. 1).

Nel paradigma della *value co-creation* le interazioni non sono tra l'impresa e gli individui, ma tra individui, con pari dignità, che operano all'interno e all'esterno dell'impresa, mentre non è detto che ad iniziare un processo di co-creazione sia l'impresa, né che questo possa essere ridotto alla

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[15] I processi *outside-in*, sono quelli più utilizzati dalle imprese, ma anche i più studiati finora e riguardano la ricerca e l'inserimento di contributi provenienti dall'esterno nei processi aziendali di *R&D*, mentre i processi *inside-out* riguardano l'"esternalizzazione" di idee, risorse, diritti di proprietà intellettuale, brevetti sia a scopo di commercializzarle sia per avviare partnership con attori esterni per il loro sfruttamento (Enkel *et al*. 2009).

realizzazione di nuovi prodotti e servizi perché quale beneficio ne trarrebbero gli individui coinvolti? Il prodotto desiderato in alcuni casi, certamente, ma in tutti gli altri, come ad esempio quando si perda un *innovation contest*? In caso questo caso, il partecipante, se si fermasse ad una valutazione solo in termini di nuovi prodotti non continuerebbe a collaborare con l'impresa avendo fatto un investimento senza trarre il beneficio sperato in termini di premio del *contest*. Tuttavia, considerando anche i benefici intrinseci e sociali in un orizzonte di lungo periodo, si possono facilmente rintracciare le motivazioni per rinnovare il coinvolgimento nelle dinamiche dell'impresa e per continuare a co-creare valore.

Fatte salve queste premesse che, in realtà, testimoniano la necessità di maggiori approfondimenti su questi temi, come già rilevato nell'introduzione a questo scritto, è opportuno concentrarsi sull'obiettivo principale di questo lavoro.

Guardando alla Tabella 2, è possibile osservare gli aspetti salienti delle piattaforme proposte dalle due prospettive sulla co-creazione qui oggetto di analisi.

Tab. 2: Service platforms versus engagement platforms

	Service platforms	*Engagement platforms*
Definizione	Struttura modulare caratterizzata da componenti tangibili ed intangibili (risorse) e orientata a facilitare le interazioni tra attori e risorse.	Un insieme di persone, processi, interfacce e artefatti il cui disegno "coinvolgente" crea l'ambiente adatto per le interazioni che intensificano le azioni dei partecipanti alla creazione del valore.
Attori coinvolti	Molteplicità di attori che cercano o scoprono diverse soluzioni ai propri problemi.	Individui interni ed esterni all'impresa che collaborano attorno ad un interesse comune.
Ruolo dell'impresa	Facilitatore perché fornisce proposizioni di valore ai consumatori al fine di generare valore.	Facilitatore delle interazioni
Ruolo del contesto	Facilitatore	Luogo in cui si sviluppano le capacità a livello di ecosistema. Le "piattaforme di coinvolgimento" possono estendere e modificare l'"ecosistema di capacità".
Come si co-crea valore	Il valore è co-creato dai vari attori attraverso interazioni.	Attraverso le interazioni tra individui dentro e fuori l'impresa.
Livelli di attività espletate	(i) co-creazione dell'offerta del servizio; (ii) co-creazione della proposizione di valore; (iii) co-creazione dei processi e dei *network* per la creazione di valore; (iii) co-creazione di conversazione e dialogo.	i) *value offerings*; ii) miglioramento/creazione di "piattaforme di coinvolgimento"; iii) ampliamento di "ecosistema di capacità"; iv) supporto/miglioramento/progettazione/riprogettazione di aspetti strategici organizzativi.
Strumenti	Interfacce digitali; IT (*social media*, *blogs*, *wikis*, *forum* e *community*)	(i) *online*: Siti Web, *apps*, spazi *online* di *communities* variamente strutturati (*blog*, *social websites*, ecc.), *social media*, "mondi virtuali"; (ii) *offline:* riunioni tradizionali, superfici di vendita appositamente progettate e gestite, *temporary shops*, eventi, *call centers*, ecc.
Criteri di progettazione	Architetture modulari-gerarchiche.	CIIT – *Creativity, Intentionality, Integrativity, Trasformativity*
Principi di funzionamento	*Set* di regole trasparenti, standards e di protocolli che rendono possibile il coordinamento degli attori, oltre a facilitare i contributi e le interazioni tra attori e risorse (es. *information security and privacy*, ecc.), e a regolare lo scambio.	DART – *Dialogue, Access, Risk-reward assessment o Reflexivity, Trasparency*

Fonte: ns. elaborazione

La Tabella sopra riportata ha il merito dell'immediatezza, sebbene nella riflessione che segue il confronto sia fatto con specifico riferimento alle piattaforme degli intermediari di *Open Innovation*.

La definizione di piattaforma data nell'ambito della *Service-Dominant Logic* privilegia gli elementi, tangibili e intangibili, mentre la prospettiva strategica guarda in maniera più esplicita anche alle persone ed ai processi, con un chiaro *focus* sull'individuo che caratterizza questa

prospettiva. In effetti, le piattaforme di OI comprendono aspetti tangibili (necessari per le loro attività), intangibili (basti pensare alla loro parte *soft*), e risorse tipiche dell'intermediario che rappresentano il cuore di ciò che porta alla co-creazione di valore nella *Service-Dominant Logic*, oltre alle persone che, fattivamente, supportano l'impresa a trovare il *partner* più adatto con cui co-creare, ma anche a stabilire e mantenere un contatto diretto e vicendevolmente benefico, di lungo periodo, tra gli individui appartenenti ad imprese diverse che collaborano. All'interno delle stesse piattaforme, poi, i processi si dipanano perché legati all'attività comune in cui regole e criteri condivisi dovranno emergere o essere creati e continuamente modificati.

Tendenzialmente questi operatori potrebbero configurarsi per l'impresa sia come una "*service platform*" sia come una "*engagement platform*".

Per quanto riguarda gli attori coinvolti nel processo sembra che gli intermediari non possano far altro che aumentare ancor di più il numero di questi da coinvolgere nei processi di co-creazione in senso "ampio", dando la possibilità all'impresa di trovare attori più adatti alle proprie esigenze. Certamente, seguendo i dettami della *Service-Dominant Logic*, appare a chi scrive, più difficile realizzare processi di *Open Innovation interactive coupled* con o senza l'intervento dell'intermediario. In questo caso, infatti, gli attori collaborano in un ambito ristretto alle *value propositions* dell'impresa per realizzarne di nuove o migliorare quelle esistenti, talvolta anche agendo sui *network* alla base delle interazioni (ampliamento/riduzione/modifica), ma di fatto realizzando più processi *ouside-in* o anche, talvolta *bidirectional coupled*, non *interactive coupled*. Seguendo questa logica, in effetti, il valore perviene al consumatore con l'uso, in dipendenza del contesto, in un momento diverso rispetto a quando l'impresa lo cattura, dopo averlo creato entro i suoi confini governandone i processi (Piller e West, 2014; Chesbrough, 2011). A consuntivo, sembra possibile affermare che nei mercati B2C sia difficoltoso addivenire ad una co-creazione di valore assumendo l'ottica tipica della *Service-Dominant Logic*. Diverso è invece il caso dei mercati B2B, dove potrebbero realizzarsi in maniera più agevole processi contemporanei di *inside-out* e *outside-in* anche al di fuori dei confini dell'impresa, dando effettivamente origine a quel luogo "terzo", esterno all'ambito tipico di influenza del singolo *partner*, che qualifica i processi *interactive coupled*.

Nel caso della prospettiva strategica, invece, è possibile avviare i processi *interactive coupled* anche grazie all'intermediario che però, ad esempio, permetta il diretto contatto con le proprie *community*, affinché possano rappresentare l' "innesco" del processo di co-creazione, così come i dipendenti dell'impresa possano agire a diretto contatto con gli appartenenti alla *community*[16].

In questo caso, l'intermediario potrebbe proporsi, con la sua piattaforma, come luogo "terzo", "esterno" rispetto all'ambito di influenza di tutti gli individui partecipanti alla *value co-creation*, offrendo i servizi al fine di supportare le diverse attività, senza che sia così rilevante se i mercati siano B2B o B2C, perché, come già ricordato, la prospettiva strategica adotta un approccio basato sulle interazioni tra individui, base del valore, a prescindere dal fatto che lo stesso appartenga o meno all'impresa.

Certamente, molto dipende per il successo dei processi di *Open Innovation* dall'atteggiamento dell'impresa che nella *Service-Dominant Logic* potrebbe essere aiutata dall'intermediario a provvedere le risorse necessarie agli altri attori per co-creare; rimane la distinzione, a parere di chi scrive, tra quanto realizzabile nei mercati B2C rispetto a quelli B2B.

Secondo la prospettiva strategica il ruolo dell'impresa, paradossalmente, potrebbe essere ancor meno difficoltoso nel facilitare le interazioni, perché essa potrebbe contare sul coinvolgimento che l'intermediario può generare negli individui che intendono collaborare con l'impresa, così come sopperire ad alcuni strumenti che la stessa, magari di dimensioni ancora piccole, non può approntare in autonomia. In questo caso, si ribadisce, qualsiasi sia la natura dei mercati in cui si muove l'impresa.

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[16] A questo proposito è possibile ricordare che *Nine-Sigma* ad esempio non permette questo contatto diretto, a differenza di *Innocentive* (Aquilani *et al*., 2015b).

Per quanto riguarda il ruolo del contesto, è possibile affermare come questo sia da intendere come un'opportunità in entrambe le prospettive di studio, ma anche per l'intermediario che nello stesso contesto può rintracciare i clienti da attrarre nelle proprie *service platforms*, così come gli individui da coinvolgere nella *value co-creation* in prospettiva strategica. Rimane, però, il fatto che nel primo caso risorse e capacità rintracciate sono a favore dell'impresa, mentre nel secondo queste diventano appannaggio dell'ecosistema in cui le stesse sono state generate; una differenza, a parere di chi scrive, non di poco conto[17].

In effetti, nel paradigma della co-creazione di valore, come già ricordato, emerge l'importanza dell' "ecosistema di capacità" che ha come tratto caratteristico quello di rendere fruibili le capacità sviluppate al proprio interno per tutti coloro che hanno contribuito al suo sviluppo e che le rende disponibili come base per ulteriori interazioni, esperienze e, in ultima analisi, per la co-creazione di nuovo valore.

A questo, appare opportuno affiancare la considerazione di come gli ecosistemi possano essere ampliati e/o modificati proprio ad opera delle *engagement platforms* che vi sono innestate e che attraverso le loro modifiche/aggiornamenti, evidentemente, cambiano anche le caratteristiche, la natura, la dimensione, ecc. degli ecosistemi in cui insistono.

In questo divenire congiunto delle *engagement platforms* e degli "ecosistemi di capacità", emerge con chiarezza un altro ruolo che può ricoprire l'intermediario di *Open Innovation* che, attraverso il suo supporto ed i suoi servizi può agevolare l'impresa nella ricerca dei *partners* più adatti alle specifiche esigenze, ma può al contempo fornire le risorse necessarie per sviluppare le capacità utili per il supporto delle interazioni all'interno della piattaforma. Una volta che questo è avvenuto le stesse capacità, però, possono e devono essere rese disponibili a livello di intero ecosistema perché questo possa essere sviluppato/modificato/ampliato dalle piattaforme di coinvolgimento che in esso operano.

In questo contesto, l'intermediario potrebbe porsi come un diverso *partners* nei processi di co-creazione che riesce a svolgere il ruolo di *leveraging* delle capacità non tanto e non solo, per l'impresa che l'ha interpellato/coinvolto, ma per l'intero "ecosistema di capacità" in cui, grazie a questa partecipazione, è stato attratto e può continuare ad operare, collaborando con attori diversi rispetto a quelli con cui è "entrato" in questo contesto.

A questo ruolo se ne aggiunge un altro per l'intermediario di *Open Innovation*, che è quello di colui che crea, *motu proprio*, una nuova piattaforma di coinvolgimento attorno ad un tema di interesse generale, come ad esempio avviene per le cosiddette *Grand Challenges* (es. Bakici et al., 2012; Aquilani et al., 2016). In questo caso, i diversi attori coinvolti contribuiranno al progetto comune traendone un beneficio, il cui inquadramento ed approfondimento però necessitano di un supporto empirico non contemplato in questo contributo.

Passando al ruolo delle interazioni, è possibile affermare come, secondo entrambe le prospettive, questa sia fondamentale per la co-creazione di valore e l'intermediario abbia proprio tra le sue funzioni principali quella di agevolare il contatto tra i diversi *partners*. Tutti gli strumenti *online* ed alcuni di quelli *offline* per taluni intermediari (es. contatto personale, riunioni) sono resi disponibili alle imprese, insieme, spesso e volentieri, ad appositi servizi di consulenza ad ampio spettro[18]; sembra pertanto che questi operatori possano essere di reale supporto in ogni attività anche *interactive coupled* che le imprese vogliano attivare e/o seguire.

Per quanto riguarda i criteri di progettazione, è interessante rilevare che molti più elementi sono forniti dalla prospettiva strategica e quindi, nel caso in cui l'impresa intenda avviare processi *interactive coupled* di *Open Innovation*, adottando questo approccio, dovrebbe analizzare se le caratteristiche della piattaforma dell'intermediario rispecchiano quelle previste dall'approccio in parola, ossia i criteri del cosiddetto CIIT.

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[17] Qui preme sottolineare che le capacità sviluppate nell'ecosistema sono accessibili solo a chi ha partecipato alla loro generazione e non in generale a tutti coloro che si muovono nello stesso ambito; in altri termini, non si tratta di capacità cosiddette *open source*.

[18] A questo proposito è possibile fare rapido riferimento a Aquilani et al. (2016).

Per quanto riguarda i principi di funzionamento è possibile affermare che quelli previsti dalle *service platforms* sono, in sostanza, quelli indispensabili per il corretto funzionamento di ogni piattaforma digitale e, dunque, anche quelle degli intermediari che sono molto complesse e ben congeniate per supportare l'erogazione di tutti i servizi che offrono in maniera efficace. Il rispetto dei principi del DART non appare, invece, di così semplice realizzazione talvolta perché la gestione dell'informazione, ad esempio, è strategica non solo per i *partners* coinvolti, ma anche per l'intermediario e per le sue attività. Questa circostanza può rappresentare un ostacolo alla concretizzazione della *value co-creation* con un operatore esterno all'impresa (vedi sopra, non permettere il contatto diretto con la *community*, in quanto *asset* strategico dell'intermediario – Aquilani *et al.*, 2015b). Pertanto, si pensa che solo quando l'intermediario intervenga in una *engagement platform* di "dominio" dell'impresa si possano più agevolmente verificare tutti i criteri del DART, in specie quello della *reflexivity* che non può generarsi a livelli molto ampi, altrimenti potrebbe danneggiare l'impresa, regalando ad altri soggetti *best practices*, ad esempio, sviluppate grazie ai *partners*, ma capaci di migliorare anche l'attività dei concorrenti se conosciute. E' vero, però, che le capacità sviluppate in uno specifico ambito dall'intermediario, possano poi essere utilizzate dal medesimo nella stessa piattaforma anche nelle interazioni con altri *partners*, in altre piattaforme e a livello di "ecosistema di capacità" contribuendo a quel processo di *leveraging* delle medesime a cui prima si è fatto cenno (vedi *supra*).

6. Conclusione

Il presente lavoro offre diversi contributi originali: (i) identifica alcuni importanti *gap* in letteratura al confine tra co-creazione e *Open Innovation*; (ii) confronta le due prospettive, nell'ambito degli studi della co-creazione di valore, che assumono lo stesso punto di vista, quella dell'impresa, con particolare riferimento alle piattaforme; (iii) studia le piattaforme degli intermediari di *Open Innovation*, confrontando *Service-Dominant Logic* e *value co-creation paradigm*, scoprendo ambiti e limiti al loro ricorso per le imprese che vogliano co-creare grazie a processi di *Open Innovation*.

Esso presenta limiti dovuti al fatto di presentare una riflessione teorica che, sebbene abbia basi solide nella *review* della letteratura fatta, non è stata ancora oggetto di validazioni empiriche; un futuro passo della ricerca in questo ambito che sarà necessario compiere. A questo, se ne possono affiancare molti altri soprattutto al confine tra *co-creation* e *Open Innovation*; ad esempio realizzando un confronto più ampio tra le due prospettive analizzate e comprendendo quali possano essere i punti in comune e quali le differenze che vadano al di là della sola prospettiva di studio per guardare alle attività dell'impresa, ma anche capire meglio le logiche dei processi *coupled* e delle due prospettive analizzate, nell'ottica di fornire strumenti ancora mancanti alle imprese. Inoltre, si potrebbe studiare il tema della fiducia in maggior dettaglio sia nell'*Open Innovation* sia nelle diverse prospettive di co-creazione (non solo quelle qui analizzate) e trovarne i tratti comuni e le differenze, contribuendo così ad un terzo filone di studi, rispetto a quelli che si sono qui tentati di legare tra di loro, anche se per lo più sotto il profilo delle piattaforme di *value co-creation*.

Sotto il profilo teorico, il maggior merito di questo studio è quello di richiamare l'attenzione degli studiosi verso una "composizione" dei diversi strumenti teorici e pratici suggeriti all'impresa, ancora non armonizzati e dove è possibile gemmare molti interessanti contributi.

Sotto il profilo manageriale, il presente lavoro ha iniziato, in qualche modo, ad operazionalizzare una possibile composizione tra due paradigmi emergenti nell'ambito degli studi di *management*. Sebbene ancora a livello "alto" in un ambito ristretto, questo tentativo di composizione può essere molto utile di fronte alla necessità delle imprese di definire nuove traiettorie di sviluppo e di aderire a nuovi modelli di *business* vincenti, approcciando, interpretando e componendo le diverse visioni di valore co-creato al fine di avviare percorsi/attività che attingano sempre più alle risorse, alle conoscenze, alle competenze rintracciabili a diversi livelli nell'ambiente

esterno in un'ottica di complementarietà delle risorse interne disponibili e, di conseguenza, accelerare i propri processi di innovazione e di crescita.

In questo quadro, le imprese possono ricorrere all'intervento ed al supporto dell'intermediario sia per la definizione delle attività di co-creazione, utilizzando i servizi offerti e gli strumenti opportunamente realizzati per facilitare l'interazione tra i vari partecipanti e *network* di conoscenza (vedi le piattaforme), sia per l'individuazione e la selezione di *partners*/collaboratori più appropriati per le specifiche esigenze di innovazione, sia perché questi creano, essi stessi, nuove opportunità di *Open Innovation* per le imprese che vogliano aderire (es. *Grand Challenges*). D'altra parte, anche le imprese potrebbero prendere parte ad un auspicabile processo di co-creazione della *value-offering* delle *Service* e delle *Engagment platforms*, realizzate dagli intermediari dell'innovazione, allo scopo di assumere un ruolo attivo e soprattutto significativo nella progettazione, nella realizzazione e nell'utilizzo di strumenti, supporti, meccanismi e pratiche sempre più personalizzati.

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TRACK 15

THE DIGITALIZATION OF CULTURAL HERITAGE (ENGLISH SESSION)

Social network analysis in cultural tourism organizations. Methodological and managerial issues of text analysis approach of heritage festivals
ANDREA MORETTI, MICHELA CESARINA MASON, FRANCESCO RAGGIOTTO

Do not touch! How 3d printing can open the way to an accessible museum!
LUDOVICO SOLIMA, MARIO TANI

Small firms and the digitization of cultural heritage. The case of Centrica and the Uffizi Gallery
FRANCESCO CAPONE, ANDREA SARTORI, LUCIANA LAZZERETTI

Social network analysis in cultural tourism organizations. methodological and managerial issues of text analysis approach of heritage festivals

ANDREA MORETTI[*] MICHELA CESARINA MASON[•] FRANCESCO RAGGIOTTO[♠]

Abstract

Objectives. *This paper proposes an interpretive framework addressing social network analysis in tourism-cultural organizations, helping develop a feasible solution for Social Media (SM) analysis within cultural organizations (better fitting organizations specificities, and culturally closer to their collective mindsets, generally humanistic).*

Methodology. *An interpretive framework has been developed. Such framework has been operationalized by performing Content Analysis using T-LAB software. Empirical analysis was divided in two steps, addressing the same research context (local heritage festival).*

Findings. *The analysis provides schematization of contexts classification in SM data analysis, that is potentially generalizable. Basing on empirical evidence, some insights about a) the possible uses of T-LAB, and b) of the conditions within which to use the software in small cultural/tourist organizations, have been provided.*

Research limits. *The proposed schematization is tested only on a single empirical context. Generalizability of usage processes of T-LAB, indicated in this paper on SM data analysis requires additional testing in other contexts.*

Practical implications. *The present work identifies stages and processes that small cultural/touristic organizations can follow to enable an analytic process, with respect to SM data (i.e., texts), using tools better fitting their operational capabilities, degree of complexity and cultural background.*

Originality of the study. *The study offers an original framework and mapping of possible analytic tools for analogic and digital data, in small cultural organizations. It also provides a representation of the usage processes of the T-LAB software, with respect to the processing of written contributions, within a consumer behavior perspective.*

Key words: *social media management; cultural tourism; small firms; cultural organization; heritage festival; T-lab*

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1. Introduction

In the last decade, it has become apparent the structural importance, in managing co-production relationships of adopting Social Media (SM) as an interaction tool, both from the side of consumers and companies (i.e., from a Relationship Marketing perspective). Such an inescapable process, its management potential appears not to have been completely exploited by organizations, mainly due to a general underestimation of related, complex, strategic and managerial implications. Few firms are in fact actually able to fully use and interpret SM data related to interaction with stakeholders (e.g., customers). In addition, the required investments (i.e., capabilities, tools, dedicated resources) are inadequate in the majority of firms. This tendency appears even more relevant in those contexts in which experiential production is the core component of organizational activities.

After collocating Social Network Analysis within a more general framework of interpretation, this paper reports the empirical analysis performed on a specific -and with a growing relevance-context: heritage festivals. Within this context, a process of analysis has been developed, specifically adapting it to the research context.

Such an application highlights the importance of considering the cognitive distance between analytic tools and specific decision-making contexts, within a SM Management perspective.

2. Theoretical Background

2.1 The digital and social revolution in marketing

A framework for Social Network Analysis in tourism and cultural organizations, is certainly grounded on some established research areas. These areas, that have gained an increasing importance as component of an interpretative framework, can be identified as:

- studies on SM Management, SM Marketing, especially within a Relationship Marketing perspective;
- studies on information complexity and organizational decision-making;

In the last twenty years, the frenetic development of ICT and Web 2.0 have had profound implications for the business world. In particular, SM and the user-firm interactions allowed by the Web 2.0 have completely reshaped how business relationships are managed (Moretti and Tuan, 2014). SM have exponentially increased the importance of virtual users (Finotto and Micelli, 2010; Kietzmann *et al.*, 2011; Mangold and Faulds, 2009; Mortara and Sinisi, 2012; O'Reilly, 2005; Vernuccio *et al.*, 2012), leading to an entirely new paradigms in knowledge economy (Nonaka 1994, Rullani 2004a, 2004b). Research has emphasized the huge revolution that SM have triggered in marketing, enhancing value co-creation within virtual communities of heterogeneous users (Kornum and Muhlbacher, 2013), and leading to the today well-known SM Marketing. SM Marketing can be considered part of Relationship Marketing (Moretti and Tuan, 2014). This view is highly consistent with the inner aim and meaning of Relationship Marketing itself, whose underlying, basic assumption can be summarized as follows: identifying and nurturing a base of long-term customers appears more profitable than continuously seeking to enlarge customer base with new customers (Reinartz and Kumar, 2003).

Customer Relationship Management (CRM) is considered as one of the most important tools of relationship marketing, allowing a clearer understanding of consumer behavior of the market. CRM appears to be intimately related with new technologies. The rise and development of SM has led to Social CRM (SCRM), a merge between traditional CRM and Web 2.0, leading to a model of «customer retention and involvement» (Faase *et al*, 2011). The engagement that is created between customers and the firm allows a substantial improvement of relationships: an increased engagement means, in fact, interactions that are more meaningful (Wang and Owyang, 2010). In SCRM, the customer-retaining perspective of traditional CRM is integrated with the involvement component,

which is strongly related to Web 2.0, in turn oriented towards interaction and exchange between users.

SM introduce new ways in which knowledge is created and shared. Co-creation of knowledge is allowed, and customers can influence others in their networks (Baird and Parasnis, 2011; Greenberg, 2010). SCRM appears a crucial tool to stay close to consumers, by monitoring constantly virtual communities in order to predict, and anticipate new and emerging needs and trends, overwhelming competition and reinforcing competitive advantages, especially in fast-moving markets (Woodcock *et al*, 2011).

Summing up, SM and SCRM can be identified as the highest point within a space of managerial-economic analysis, which increasingly sees a progressive transition from the production of transactional value, towards the production of a more *relational* value. In such a context, value production itself is shifting from being strictly *analogic* to being strictly *digital* (Figure 1).

Fig. 1: SM Analysis Managerial Framework
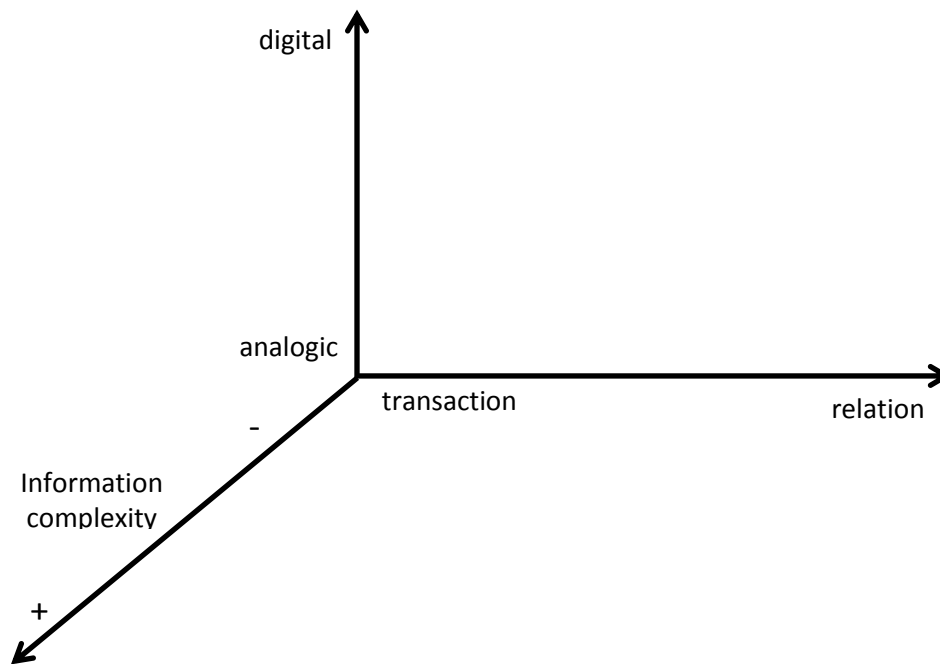
Source: our elaboration

2.2 Information complexity and managerial decisions in SME & Small Organization

The second stream of research useful in Social Network Analysis is represented by contributions classifying the level of complexity of information structures, supporting business decision-making processes. Such stream represents a traditional topic in organization studies literature (Costa and Nacamulli, 1993; Rugiadini, 1979).

Information complexity is commonly classified as high or low, according to the following parameters:

- the extent to which information is structured, with respect to the strategic decision-making level (Anthony, 1965). The more information is structured, the simpler its processing. As information becomes less structured, its complexity increases. Such levels of complexity are generally linked to the level at which decisions are taken (strategic, managerial, operative);
- the width of the spectrum with which information can be used (and the organization is willing to use it). Information collected and employed for well-defined, limited purposes (e.g., single decisions) is generally classified as low-complexity information. Instead, collected information that is used for wide range of purposes (i.e., many decisions in many organizational functions and levels) is commonly classified as highly complex;
- in addition, information density (concentration: i.e., the extent to which information is

distributed), is often used as an additional measure of information complexity (Bonifacio, Bouquet and Cuel 2002). Accordingly, whereas information is concentrated in terms of articulation and usage, complexity tends to be low; on the other hand, high complexity occurs as information and its use is distributed.

Organizations can consider the above criteria as decision-making conditions require information processing (i.e., complex, various, variable information). Such processing may be required to support business decisions, and to transform the original information size to a reduced and relevant one (for decision-making).

The relationship between information complexity and organizational dimensions is intimately linked to the topics presented above. Existing literature on firm dimensions (e.g., Di Bernardo, 1997) highlights the importance of adequacy of tools supporting decision-making, to existing organizational processes. In particular, operative information mechanisms (Rugiadini, 1979) must be strongly adequate to the context. An information system (tools and procedures) that is not able to adapt to organizational conditions is totally unuseful. Hence, from this perspective, the use of any information tool or process supporting decision-making requires contextualization.

As far as is known, academic and professional literature has not yet provided a definitive classification of analytic tools for Social Networks; not identifying, in this way, organizational and information complexities related to the implementation and to the use of such tools. Classifications exist only with respect to the characteristics of analytic tools[1]. In any case, such classifications do not represent an interpretation in terms of the relationship between the complexity of produced information, and supported decisions.

The elements that can be derived by such tools are exquisitely quantitative, and connected with specific online behaviors (e.g., if users "like" something on Facebook), that can be quantified and considered as evaluations or intentions. The point is, such information is not related to the textual content of social networks.

Instead, the textual content is extremely interesting for management analysis (of social interactions). In order to extract this interpretation value, specific research processes are required, usually based on text analysis (e.g., NUDE™, NVIVO™, T-Lab™), or data analysis tools (e.g. R™, Python™), and on analytic data processes (*data science*).

Both quantitative analysis of likes and text content require a strategic interpretive framework. The most diffused perspective today appears to be the relational perspective, that is pretty tactical, and not strategic (Tuan, 2015), limiting in this way the potential of such tools in terms of business management.

Within this framework, despite the enormous potential that SM offer, the Italian business landscape still appears not to fully understand such opportunities (Moretti e Tuan 2014): albeit an increasing number of Italian organizations is more present on SM than in the past, still they conceive SM as a sort of "clone" of corporate website. Furthermore there are no commonly accepted measures to assess SM marketing strategies (Gillin, 2009); firms can rely mainly to SM and marketing analytics (Lovett and Owyang, 2010).

3. Festival as knowledge creation systems

3.1 Festivals & Festival organizations: project work of knowledge creation

The general framework depicted in Figure 1 founds a great relevance in those contexts in which knowledge production is the main factor of the production process. In cultural and tourism productions, festivals well represent those situations (Getz, 2008). Research interest on festivals follows different perspectives of analysis:
- research on events and festivals, (as esperiential, cultural and touristic phenomena denoted by

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[1] For a more specific classification, see Kevan L. (2014) https://blog.bufferapp.com/social-media-analytics-tools

economic relevance), and the related organizations involved in managing and developing them;
- studies investigating consumer behavior and motivations in festivals.

National and international *festivalization* of cultural and touristic production has shown a dramatic growth in the last two decades (Richards, 2007). Such growth has triggered increasing attention from academic and professional literature. Such a strong interest for management and organization of *temporary* events (i.e., festivals) can be justified by, at least, three reasons:

- the experiential nature of festivals (Pine and Gilmore, 1999; Carù and Cova, 2005);
- the festival potential, in terms of characterization and positioning effects on tourist destinations (Franch 2002; Prentice, Andersen 2003);
- the economic relevance of the phenomenon (Argano *et al*. 2007; Gibson *et al*. 2010; Long and Robinson 2004; Trezzini 1992)

According to the first perspective, processes of value production show a strong relational characterization. The most important relationships occurs between the system of product offering (one or many), participants (that are, in this case, *pro-sumers*), and other partners (e.g. members, sponsors, other cultural organizations). The intensity of the relationship varies according to the extent to which co-production takes place within different contexts.

Adopting the second perspective, the inclusion in the tourist offering of festivals is clearly identified as a key component of destination positioning, contributing also to determine the identity of the destination.

The economic relevance of the phenomenon has itself stimulated a wide research *corpus*; from a macroeconomic perspective, and from the point of view of the impacts of these events (Brown, Var and Lee, 2002; Lee, Taylor 2005). Such development has reached now a strong, established knowledge base, including both methodologies and indicators.

From a managerial point of view, festivals have been characterized mainly by an augmented role of value co-production, in all management stages (pre-festival, festival, and post-festival) and by the important role of "project organizations" (Argano 2005).

During the pre-festival stage, co-production involves strategic (e.g., selection of participants, definitions of the main themes) and operative (e.g., accommodation, communication and promotion) aspects. As the event takes place, co-production occurs as, normally, production and consumption coexist. In addition, strong interactions between the system of offering and participants can be noticed. As the event concludes, (post-festival), co-production may be strongly connected with narrative elements, concerning for example participants' experiences, and Word of Mouth.

Analyzing the three stages of co-production highlights where digitalized co-production can be more relevant in managerial terms. In fact, in all the three stages, interaction management could partially be -or even fully- digitalized. Highly interactive websites, and social tools connected with festival development, management, and narrative processes, exemplify the digitalization opportunities described above. Such virtual places represent a virtual reification of festivals, where their effects perpetuate, develop, and are testified by communities of users; in these knowledge-based processes, knowledge that is produced is characterized by redundancy, recursiveness, multiple usability, which determine, in turn, its value (Rullani, 2004a, 2004b).

On the other hand, such virtual processes and places require increasing resources (i.e., managerial, institutional, relational) as the festival phenomenon, and its reification through these processes, grow.

Project organizations tend to be majority of organizations in charge of festival management (Argano, 2004). Such organizations are commonly characterized by:

- the variety and variability of organizational dimensions, during the stages of festival development (in any case, micro-organization);
- the predominant role of voluntary work of their members;
- the unique combination of professional and nonprofessional subjects.

Such conditions lead to increasing difficulties, with respect to structuring and retaining competences and capabilities, useful in pursuing organizational goals. Managerial processes appears

problematic too. On the one hand, managing value production processes is denoted by a concentration in terms of time: as the festival takes place, but also extending to the time between one edition and the other, hence requiring increasingly structured resources.

On the other hand, the increasing digitalization of both production and reification of specific knowledge deriving from festivals, requires too specific resources devoted to a) collection and analysis of the produced knowledge, and b) managing the social interaction with all relevant stakeholders.

Such conditions are very unlikely to be present within the current configurations of organizations managing festivals. In fact, the majority of them still not appear to be strategically and dimensionally ready to face the challenges described above.

Basing on the above considerations, it is possible to highlight how, within SM Management, festival production is structurally positioned as far from the origin in Figure 1. The level of information complexity increases with the increasing use of SM (in both operative and strategic stages), and with the implementation of the storage festival collective memory within such information infrastructures.

3.2 Motivation in festivals

According to the goals of the present research, studies on motivation of festival participants support the interpretation of results obtained using the tools of Social Network Analysis, in this particular context. As other contributions point out (Mason, Moretti and Raggiotto, 2016) results reported in this paper appear in line with those deriving from motivation literature. The reminder of this paragraph highlights the main traits of literature on festival motivation, leaving a more detailed review to the publications indicated at the end.

Tourism research has focused strongly on visitor's motivations. Ralston and Crompton (1988) were among the first providing a study about the motivation of event participants. Following this seminal contribution, Uysal *et al* (1993) were among the first studies to provide an exploration of visitors' motivation dimensions. In general, studies on festival motivation have covered different kinds of festivals, in several countries (e.g., Ralston and Compton, 1988; Uysal et al, 1993; Formica and Uysal, 1996; Lee, 2000; Lee, 2004; Kitterlin and Yoo, 2014). Albeit some similarities in dimension of motivation are recurring in those studies, each contribution indicated specific dimensions of festival motivation. Some literature reviews on the topic, like Lee *et al* (2004), Li and Petrick (2006), and Thompson and Schofield (2009) provide extensive exploration of festival motivation literature.

4. Research context and methodology

4.1 Research context

"Tempus Est Joucndum" is an heritage festival located in Gemona del Friuli, a small town in northern-east Italy. Since 1992, the event is managed by *Pro Loco Glemona*, a local nonprofit organization. In *Pro Loco Glemona*, general direction is concentrated in the hands of a permanent committee. Event management and organization are, instead, responsibility of a small group of people (three/four). In particular, those young members are responsible for the artistic and marketing direction of the event. This small group widely increases, with volunteers during the event

The event is more than a simple historical reenactment: it is aimed at going back in the Middle Age, for one weekend, with ancient foods, no modern comforts, and even the use of the ancient currency of Gemona (Table 1).

Tab. 1: Summary of the event's major features

TEMPUS EST JOCUNDUM	
Foundation	1992
Editions	23 (2015)
Location	Gemona del Friuli (Italy)
General description	Heritage festival. Highly detail reenactment of every aspect of medieval life. The event develops around the traditional rivalry between the town
Characteristics	Highly detailed historical reconstruction: • Provision of only ancient foods and beverages (e.g., the *mellitum* wine) • Traditional costumes and apparel • No use of modern materials (e.g., plastics) • Temporary use of the ancient medieval currency (Tallero) • No use of electric energy during the event
Nr. participants	ca. 10.000 (5% from Austria and Slovenia)
Related events	Inspired by the ancient rivalry between *borgate* • *Cena Propiziatoria*: a dinner representing a sort of good wish, that takes place before contests between groups begin; • *Palio del Niederlech*. A big contest between groups. Inspired by the medieval tax named *Niederlech*. • *Disfida Dama*. Winners of *Palio del Niederlech* play a match of living draughts. The winners' *dame* is nominated as the Castle Dame • The overall event is disseminated of various ancient figures (inquisitors, jugglers, bandits).
Support services	Local operators, support of volunteers in organizing dining and resting spaces
Communication and promotion	• Traditional promotion (e.g., flyers, posters, spaces in newspapers) • Web editorial plan (since 2015)

Source: our elaboration

4.2 Methodology

4.2.1 T-LAB

The entire analysis was carried out adopting the T-LAB software. It offers a unique combination of linguistic, statistical and graphical tools applied to text analysis. The software allows analyzing various texts (e.g., single books or a number of different web posts taken together). After a preliminary, proper text codification by the researcher (for data entry), a number of analysis are allowed, such as:
- perform various kinds of correspondences analysis, and cluster analysis;
- creating semantic maps, in order to identify sequential relationships between words or topics in the text;
- check for the contexts of occurrence of single words;
- analyzing the overall *corpus* (i.e., the codified text) or just some subsets of it, using different lists of keywords;
- creating various contingency tables or co-occurrence matrixes.

4.2.2 Methodological steps

This study adopts an experimental combination of different research methodologies, applied to text analysis. The analysis was divided into two separate steps.

The first step (*ex-ante* step) was performed analyzing contributions in various online sources. This activity was performed before the festival took place (few weeks before the event).

Selected techniques available in T-LAB were used explore the most recurring words, and to analyze the most important relations among them. During the *ex-ante* step, the texts to be analyzed were identified as follows. First, the most common social channels to find events and tourism information in Friuli-Venezia Giulia were identified (e.g., popular blogs or institutional webpages). The seven most popular contributions were selected. The number of Facebook "Likes" was considered as popularity indicator (see Table 2).

For the *ex-ante* step, among the tools included in the T-LAB software, were selected those appearing, to the researchers as the most significant for the purposes of the study. The T-LAB tools employed in this study were word association, co-word analysis, and comparison between pairs of keywords (co-occurrence analysis). A detailed description of the three tools will be provided *infra §* 4.1.

A second, *in itinere* step was then performed. During the event, a pen-and-paper questionnaire was distributed among visitors. The questionnaire was divided into 27 points, addressing different aspects of the event. Items were based on 7-point Likert scales; in addition, respondents were asked to list five major motivations leading them to visit "Tempus est Jocundum". 400 units were surveyed.

The same analysis steps conducted during the "ex-ante" stage were also performed in this step, on the questionnaire data, only with respect to non-structured answers (motivations listed). Results were then compared with those emerged from the *ex-ante* stage.

Tab. 2: Contribuition and FB Likes of Tempus est Jocundum festival

Source	Number of Facebook Likes (25.10.2015)
http://www.turismofvg.it/evento/131553	57.892
http://www.eventifvg.it/site/eventi/tempus-estjocundum-2015.html	29.097
http://www.udine20.it/gemona-tempus-estjocundum-la-rievocazione-medioevale-30-lug2-ago-2015/	26.372
http://newsmedievali.blogspot.it/2015/07/tempusest-jocundum-2015-gemona-del.html	24.263
http://www.girofvg.com/tempus-est-jocundumpalio-del-niederlech-e-dama-castellana-gemonadel-friuli-ud/	11.596
http://www.fogliogoriziano.com/tempolibero/gemona-medioevale/	4.780
http://www.youfolklore.it/tempus-est-jocundum-2015-gemona-del-friuli/	2.912
http://www.portalenordest.it/conoscere/costume-etradizioni/ rievocazioni-sagre-fiere-feste-emanifestazioni/tempus-est-jocundum-rievocazionestorica-a-gemona-del-friuli	285

Source: our elaboration

4. Results

4.1 The ex-ante step

4.1.1 Word association

In order to check for the most frequent word associations that occur in the selected web contributions, radial diagrams have been developed. The word "medievale" (medieval) was the most recurring word (19 times). The second most recurrent word was "Gemona". For both, a subjective analysis has been performed.

Such analysis brought to the definition of some clusters, obtained primarily by observing words referring to the same subject. Clusters can be defined as a number of elementary contexts, characterized by a pattern of keywords, and described by the most representative lexical units. Following this procedure, the analysis of the word "medievale" returned the following graphical representation:

*Fig. 2: Associations with the word "Medievale"*
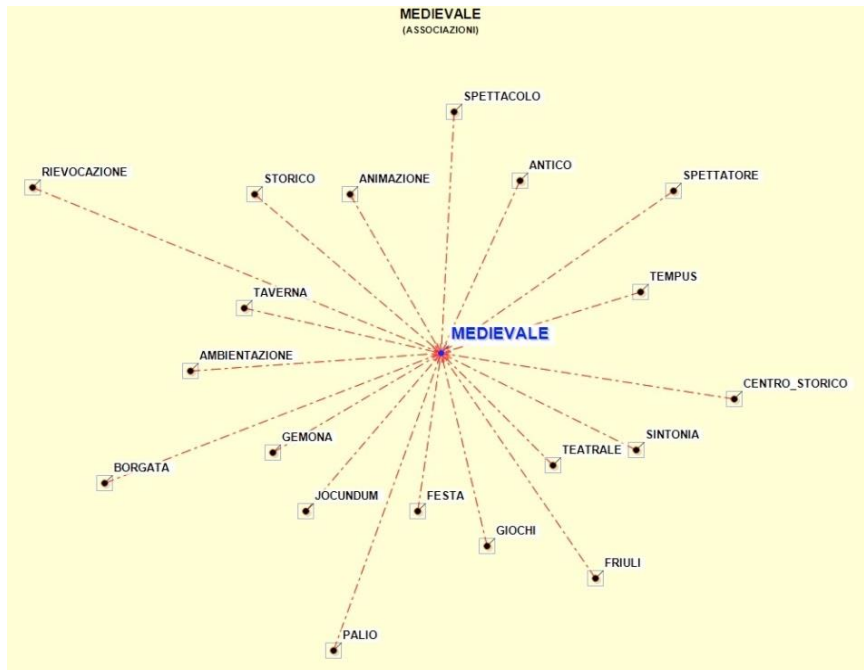
Source: own elaboration

Subjective analysis identified three clusters:
- "storia" (history), grouping the lemmas "antico" (ancient), "Tempus" (festival's name), "Joucndum" (festival's name), "rievocazione" (reenactment), "storico" (historical);
- "Intrattenimento" (entertainment), grouping "spettacolo" (show), "spettatore" (audience), "sintonia" (harmony), "teatrale" (theatrical), "giochi" (games), "festa" (celebration), "palio" (historicaly tapestry), "Borgata" (small village), "tavern" (tavern);
- "Luogo" (place), grouping "centro storico" (old town center), "Gemona", "Friuli", "ambientazione" (location).

Figure 3 shows the radial diagram for the word "Gemona".

Fig. 3: Associations with the word "Gemona"
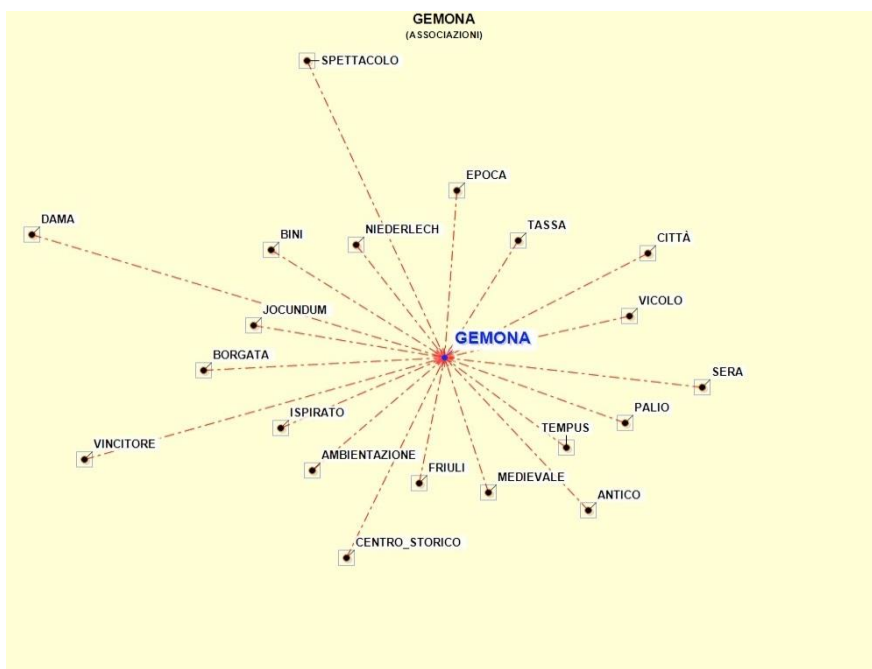
Source: own elaboration

The same procedure was followed, leading to the identification of the following clusters:

- "Storia" (history), grouping "epoca" (historical age), "tassa" (tax), "Tempus", "antico" (ancient), "medievale" (medieval), "Jocundum", "Niederlech" (a kind of medieval tax);
- "Intrattenimento" (entertainment), grouping "spettacolo" (show), "palio", "ambientazione" (location), "ispirato" (inspired), "vincitore" (winner), "Borgata", "dama" (lady), "Niederlech";
- Luogo (place), grouping "città" (city), "vicolo" (alley), "sera" (evening), "Friuli", "centro storico", "Bini" (Via Bini is the street in which the festival takes place).

Looking at the above figures, it can be noticed the emphasis given by the authors of the analyzed contributions to the historical and cultural value of the festival, together with the spectacular nature of the whole event, involving visitors in a number of ways: by tasting ancient food, providing highly evocative shows and games, and so on.

In addition, location is also strongly emphasized. The festival is in fact carried out entirely within the historical area of the town, and only in the evening.

4.1.2. Co-word analysis

The second analysis carried out during the *ex-ante* step is co-word analysis. T-LAB analyzes similarity matrixes by using a number of statistical techniques, allowing to represent the relationships between entered data within a reduced space (Multidimensional Scaling, MDS). In order to better provide a representation of the relationships between lexical units, T-LAB adopts the Sammon method: through the computation of an association index, the software identifies the proximity values of the processed data. Proximity values are typically square matrixes, allowing the interpretation of the relationships between objects (proximity/distance).

The stress function measures the correspondences between the MDS map and the input matrix: the lower the level of stress, the higher the goodness of fit. In this analysis, a value lower than 0.10 has been considered as an indicator of goodness of fit. In this case, the value was 0.606, indicating an optimal goodness of fit. Figure 4 provides a representation of co-word analysis.

Fig. 4: Graphical representation of co-word analysis
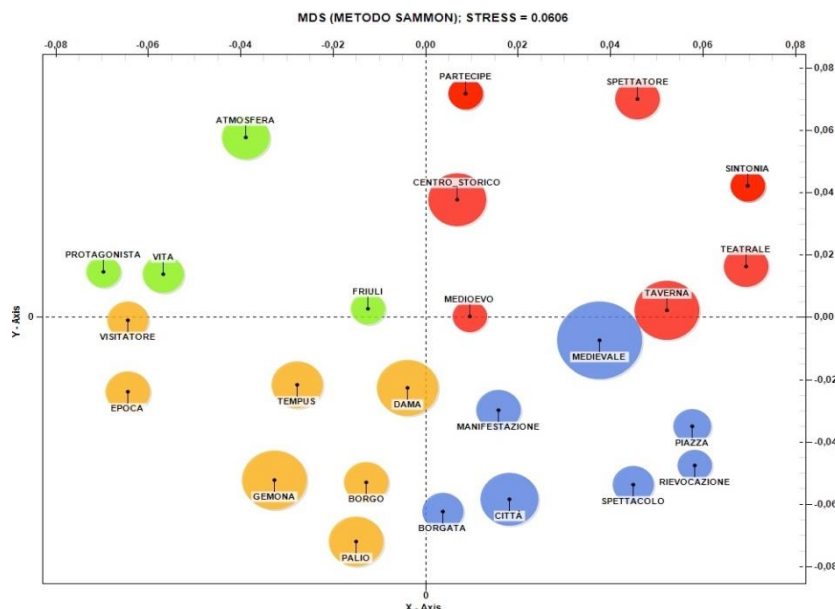
Source: own elaboration

Co-word analysis (Figure 5) confirms the willingness of the producers of analyzed online contributions, to promote the festival emphasizing the word "medioevo", and highlighting some peculiar aspects of the event, such the absence of modern food, the fact that the event takes place in the town center, the reenactment of medieval challenges.

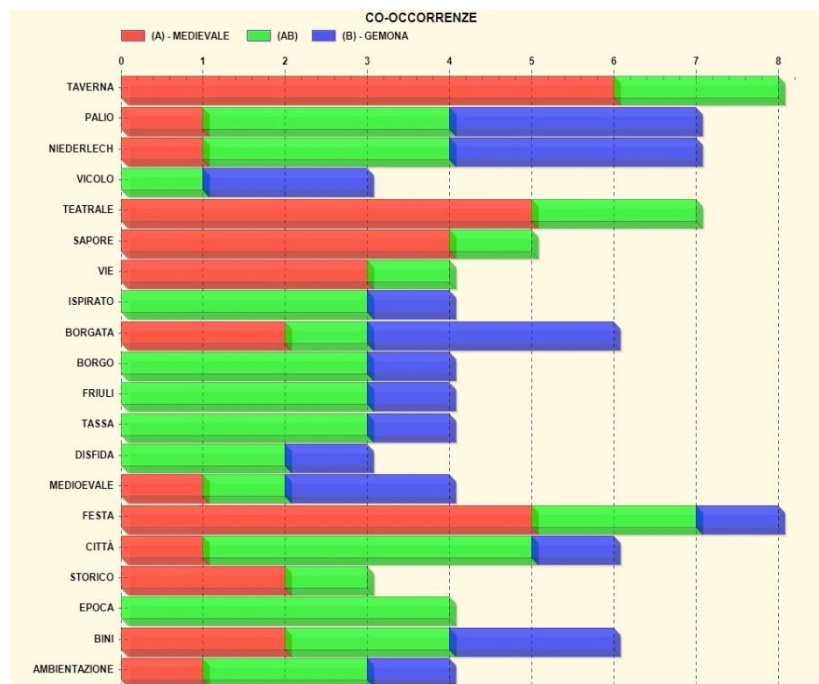*Fig. 5: The dominant words in co-word analysis*
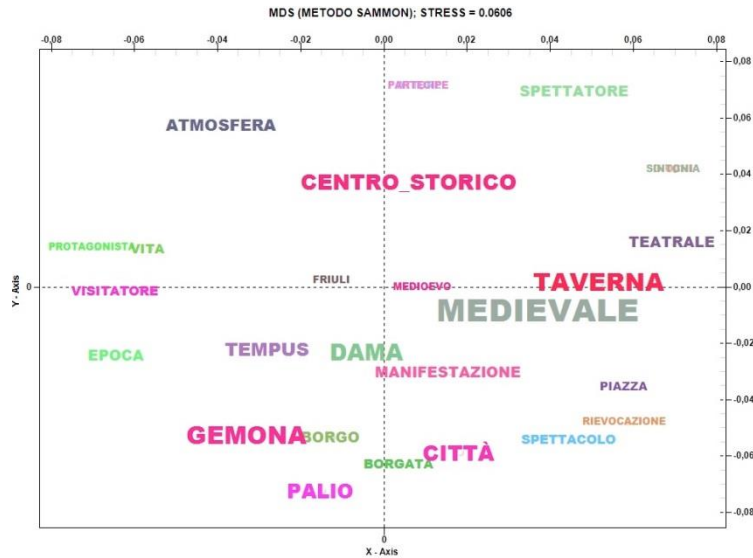
Source: own elaboration

4.1.3 Comparisons between pairs of keywords

The final type of analysis performed in this stage of the study compares couples of keywords. In order to perform this analysis, the researcher needs first to choose the lemmas to take into consideration. According to the results of both co-word analysis and word association, the most recurring words "medieval" and "Gemona" were chosen.

The resulting histogram (Figure 6) allows to observe the number of elementary contexts in which every lemma presents a co-occurrence relationship with the A keyword (in this case, "medievale", labeled in red), the B keyword (Gemona, labeled in blue), and both keywords (AB, labeled in green). Note that the lemmas with the most relevant co-occurrence are "Palio", "Niederlech", and "Festa".

Fig. 6: Comparison between the keywords "medievale" and "Gemona"

Source: own elaboration

A specific T-LAB feature allows to analyze the percentage with which every lemma develops co-occurrence relationships with the two lemmas that are mostly used.

Looking at figure 7, the following considerations follow:

- "Festa" is mostly associated to "Medievale" 62.5%, (the festival is by definition a medieval event);
- "Festa" is also sometimes associated (12.5%) to "Gemona". This indicates the perception of a complete involvement of the town in the event (the town is perceived as a component itself of the overall event, not just a location)
- Finally, "Festa" is also associated to both lemmas together (25%), indicating that, however, the event is perceived also as a good occasion for having a good, funny time, regardless of its historical and cultural value.

Fig. 7: Co-occurence relationships with their respective percentages
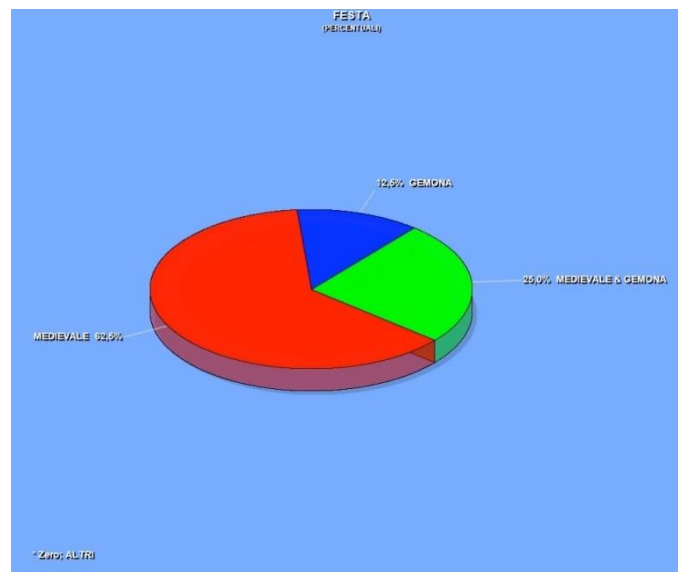
Source: own elaboration

Finally, the ex-ante step of the analysis shows at least four "thematic nuclei". First, the historical aspects of the festival; secondly, the spectacular nature of the event (recreating the rivalry among different groups of local inhabitants); finally, the presence of several artists entertaining visitors, and the peculiar location (the town of Gemona, illuminated only by torches).

4.2 The in itinere step

4.2.1 Word association

Also in this case, radial diagrams were built for the most recurring lemmas. In this case, "divertimento" (amusement) represents the most common motivation. Figure 8 depicts the radial diagram for the word "divertimento".

In this case, three clusters can be identified:

- "Evasione" (distraction), including the lemmas "spettacolo" (show), "musica" (music), "festa", "giochi" (games), "amico" (friend), "compagnia" (company of people), "convivialità" (conviviality);
- "Gastronomia" (gastronomy), containing "mangiare" (eat), "cibo" (food), "mellitum" (a particular wine sold during the event), "chiosco" (vending stand), "cucina" (cuisine), "taverna" (tavern), "enogastronomia" (gastronomy);
- "Luogo" (place), containing "storia" (history), "appartenenza" (belonging), "tradizione" (traditions), "abitudine" (habits), "passato" (past), "Friuli".

Fig. 8: Associations with the lemma "Divertimento"
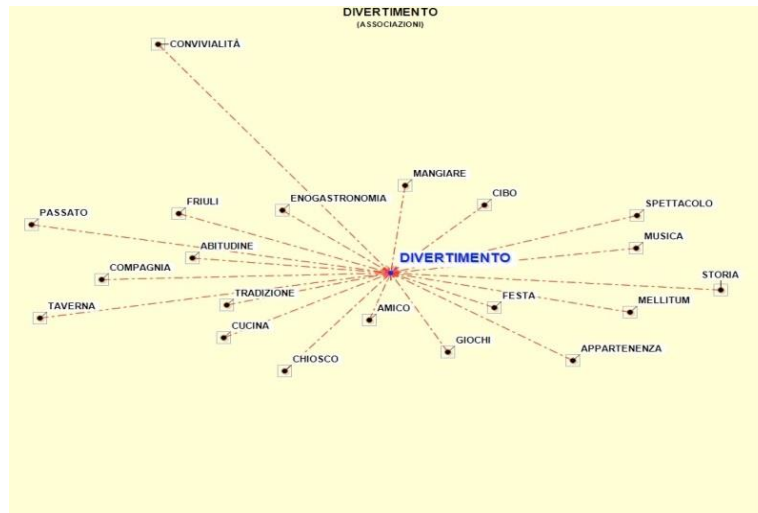
Source: own elaboration

The radial diagram in figure 9 represents the associations related to the second major motivation: "storia" (history).

Note that, despite the different semantic area, the identified clusters are the same:

• "Evasione" (distraction), containing the lemmas "vacanza" (holiday), "evento" (event), "visita" (visit), "partecipazione" (participation), "cultura", "passatempo", "passione", "interesse", "divertimento", "atmosfera", "immersione";

• "Gastronomia", including "cibo" and "sapore";

• "Luogo", including "passato", "medioevo", "usanza", "costume", "tradizione", "fuoco", "colori".

Despite notable semantic differences between the two diagrams, graphs clearly show the strong need, among participants, to find some distractions from everyday life. They see the historical reenactment as an ideal occasion to take some break from everyday life (as suggested by the lemmas "immersione", "distrazione", "convivialità"). There is also a strong interest towards gastronomy, perceived as an additional occasion of distraction.

It also worth to note the frequent use of the lemmas "Friuli", "appartenenza", "tradizione", indicating a strong sense of belonging to the local community, to the Region, and to the town and the event themselves.

Fig. 9: Associations with the lemma "Storia"
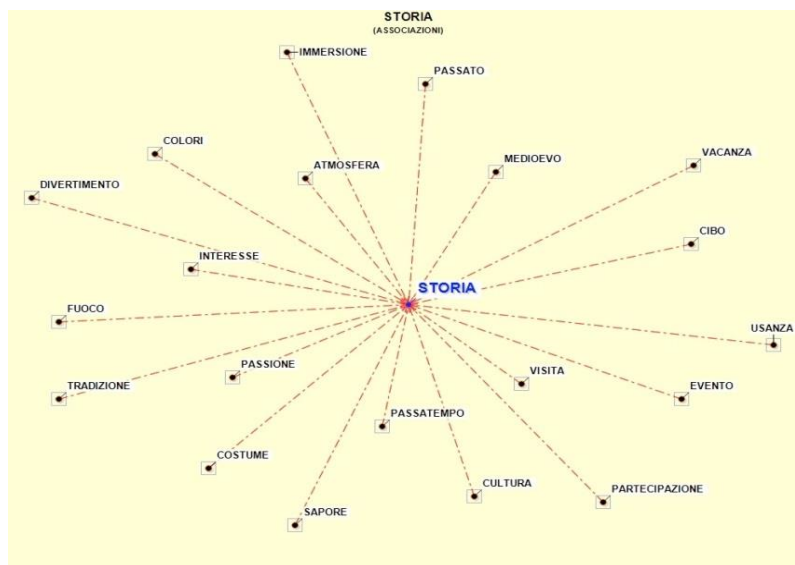
Source: own elaboration

4.2.2 Co-word analysis

As mentioned earlier, co-word analysis consists in analyzing similarity matrixes and in the representation of relationships in a defined space (Multidimensional Scaling, MDS).

In this case, the value of stress (goodness of fit) is 0,0835. Note that it is slightly higher than the same value in the ex-ante step. This could be justified by the different typology of texts that has been considered (in the *in itinere* case, single words reported in questionnaires from a random sample of respondents).

The figures below confirm the situation depicted by radial diagrams. "Storia" and "Divertimento" are the most recurring lemmas in the "motivations" section of the questionnaire. Such lemmas are also the most relevant with respect to the relationships between lexical units.

Note the presence of the word "atmosfera" (atmosphere), one of the most influential lemmas in the co-word analysis. In this case, atmosphere can be considered as the historic atmosphere or as the right atmosphere to have some fun.

Fig. 10: Co-word analysis graphical representation
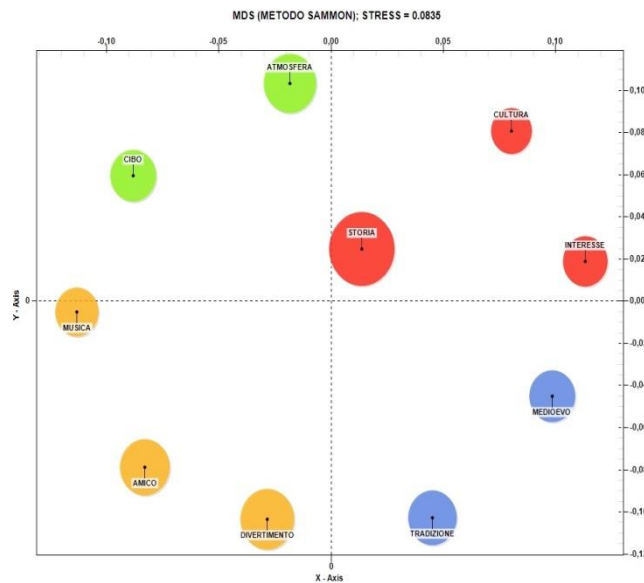
Source: own elaboration

Fig. 11: The dominating words in co-word analysis

Source: own elaboration

516
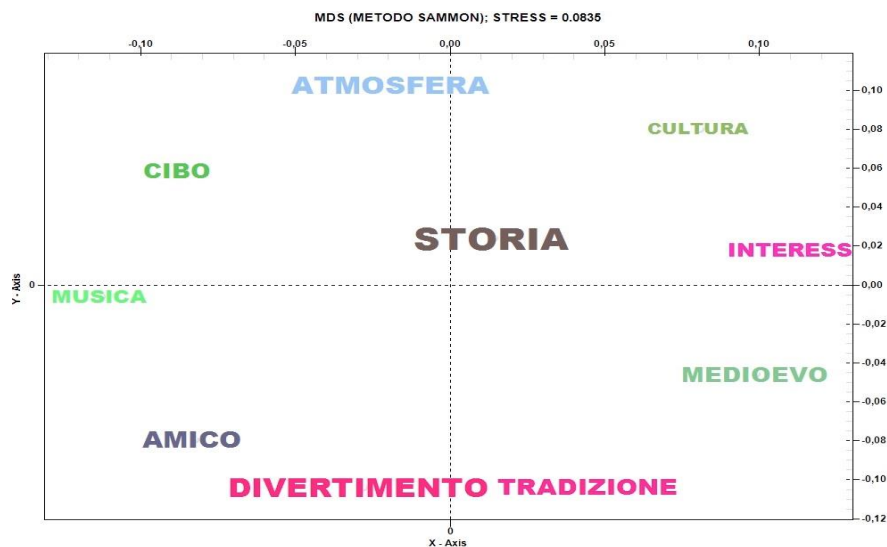
4.2.3 Comparison between pairs of keywords

As in *ex-ante* step, also here this part of the analysis took into consideration the most recurring lemmas.

Histograms (Figure 12) show the elementary contexts in which each lemma shows a co-occurrence relationship with the keyword A ("divertimento", amusement, indicated in red), the B keyword, labeled in blue ("storia", history), and both the keywords, indicated in green (AB).

The word "atmosfera" (atmospherics) is related to both words, singularly and with the two words taken together. This confirms how the term "atmospherics" has a double meaning, both in historical terms and in terms of pure amusement and distraction.

Figure 13 shows, instead, the percentages with which the term is present in the co-occurrency relationships.

Fig. 12: Comparison between "divertimento" and "storia"
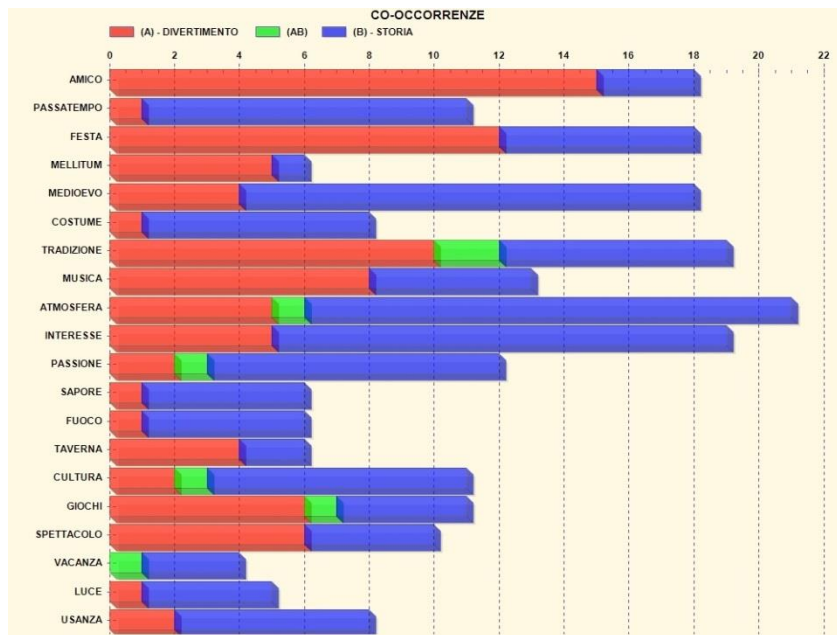
Source: own elaboration

Fig. 13: Co-occurrence relationships with respective percentages
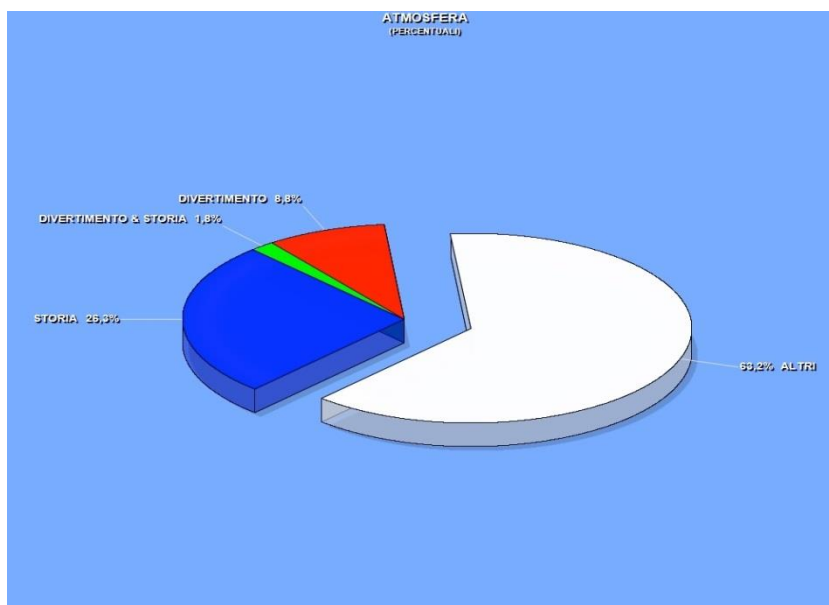
Source: own elaboration

As in the *ex-ante* step, Figure 13 shows that, albeit 60% of the cases present "atmosphere" as related with lemmas that are different from those considered in the analysis, 40% of the cases shows a relation between "atmosphere" and one (or even both) the lemmas considered in the analysis. This means that, at least 160 units (on the total 400) have associated the word "atmosfera" to the word "divertimento", "storia", or both of them.

5. Discussion

5.1 Analytical aspects in a cultural/touristic context

Discussion can be articulated on different layers.

From a content analysis point of view, combinations of words developed in the *ex-ante* and in the *in itinere* steps are coherent with the most important contributions on cultural festival motivations.

According to the results reported throughout this paper, the importance of the historical connotation of the event, together with the peculiarity of the geographical location are both confirmed by the two steps. In addition, motivational analysis has shown a strong sense of belonging not just from the point of view of local inhabitants, but also from the point of view of visitors coming from different Italian regions. Finally, motivational analysis shows the strong role played by the gastronomy.

The choice of splitting the analysis into two, separate stages has allowed to stress some relevant aspects.

First, content categorization of texts in SM, using simplified text categories, allows the researchers to better identify the entity and the articulation of the phenomena to be analyzed. In addition, the possibility to verify during the *in itinere* step the correspondence between text categories and the results of questionnaires allows to stratify the analysis into more layers.

Such stratification leads to different effects. On the one hand, it offers the possibility for SM Manager to classify (especially during periods far from the "days of festival") all the information produced and detected using frameworks that the organization can understand (i.e., cognitively closer). On the other hand, checking for the correspondence between actions performed by the organization and participants' perceptions is allowed.

Additionally, the process of analysis performed using the T-LAB software is characterized by a high level of "frugality". This term refers to the possibility to obtain more information for decisions with less resources (e.g., with respect to *data science* processes). This is possible for, at least, two reasons: first, the possibility for the organization to use logic categories to classify texts, closer to organization's cultural categories (reduced cognitive distance); secondly, the possibility to translate results in such a way that they can be communicated to the members of the organization, without further interpretation or translations by other subjects.

Frugality is coherent with the organizational context of touristic/cultural organizations connected to festivals. Given that such organizations are "culture-driven", it is useful to underline the structuring potential of such tools, with respect to the institutionalization of the representation of relationships between organizations and their relevant value systems (Grandinetti and Moretti, 2004).

Finally yet importantly, the research confirms the managerial complexity of using SM data, in absence of any strategic perspective to connect them with.

In the case of the present analysis, results and their analysis have not been able to modify the organizational perception of the phenomenon, just leading to a while approval to the organizational member (marketing director) in charge of the initiative. Information produced have been considered as useful for all decisions; however this information have not been actually used in the decision making process. This suggests, under the perspective previous presented, that huge information complexity still exists.

5.2 Implications for future research

Firstly, confirmation about the importance of *content* and *place* aspects with respect to festival motivations, and the small dimensions generally associated to organizations managing cultural festivals, call for a more in-deep analysis of, whether, in managing a SM presence of such organizations should remain autonomous and how this presence could be organized.

As Tuan and Moretti (2015) pointed out, small organizations usually hire part time, freelance SM Managers. It could be interesting, from this point of view, to deepen if cultural and touristic organizations tend acquire such services following hence a vertical integration logic (i.e., the same SM Manager is employed by several organization within the same territory), or if they pursue a more horizontal-integration logic (a single SM Manager is used by many organizations, involved in managing festivals of the same kind).

In both cases, the analysis of the tactical (strategic) articulation of the use of SM could allow a deeper, more structured understanding of the phenomenon, with respect to current contributions, especially in terms of information complexity.

6. Conclusions

This paper enriches consumer behavior literature by applying an innovative approach of analysis, in a very specific tourism context. At the same time, important managerial and practical implications are embedded.

Taking together the results of the two steps of research allows to provide some insights in understanding whether the web actually influence tourists' choices.

It is easily understandable that Web 2.0 appears to be as an essential tool for tourism promotion. The proposed analysis also shows the importance of *integration*. Developing a strong social presence of an event goes far beyond developing and updating a profile in the most relevant social networks. The analysis provided in this paper shows the importance of a strong interconnection between editorial planning, content management, and SM management. The key to success, especially for smaller realities (e.g., cultural events in small communities) relies in developing a smart cultural promotion that starts *before* the event, being part of a wider editorial project aimed at reaching the highest possible number of users. A great deal of effort should be devoted in attempting to actively involve users, by establishing living communication channels, stimulating continuous exchange of opinions and information, trying to establish enduring relationships through feedback loops.

Such a strategy requires time, resources and capabilities that, in some small, limited realities may not be available. In addition, data sources cannot be actually affordable for small, voluntary organizations responsible for event management.

Building on such problems, this paper has tried to provide an affordable methodological/technical approach to develop, especially in small contexts, powerful insights to improve promotional and marketing actions. The techniques used in this paper are not just affordable in terms of costs and resources needed, but at the same time, they present an additional advantage. Semantic analysis does not require extensive capabilities and resources to be performed (like traditional market analysis), rather it allows a certain degree of autonomy to users (i.e., the possibility to use tools and procedures without extensive knowledge). In addition, such kind of analyses allows more room for casualty, allowing users to pay attention more easily to weaker signals and focusing on the element of more interest.

Semantic analysis applied to social network allows also to enlarge the scope of tourism professionals that can potentially use this powerful tool to assess consumers' motivations. Given the huge number of tourism professionals tend to have a humanistic background, quantitative, and statistical methods can be difficult to manage and apply. This leads, in turn, to losing a possible source of competitiveness (analyzing consumer motivation), unless great efforts (in terms of

investments) are devoted. From this point of view, therefore, semantic analysis appears to be as an alternative, both in terms of affordability, manageability, and because it can be perceived as closer in terms of cultural background for potentials users, allowing more casualty rather than structured procedures.

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Do Not Touch! How 3d Printing can open the way to an accessible museum!

LUDOVICO SOLIMA[*] MARIO TANI[•]

Abstract

Obiettivi. *Il presente lavoro si propone di analizzare come le tecnologie utilizzate oggi per la prototipizzazione rapida, con particolare riferimento alla stampa e alla scansione tridimensionale, possano essere utilizzate dalle organizzazioni museali in modo da superare le criticità legate alle diverse forme di accessibilità.*

Metodologia. *Dopo una prima parte volta a delineare le caratteristiche dei musei ed a presentare le tecnologie per la prototipizzazione rapida, il paper si concentra sul loro utilizzo da parte delle organizzazioni museali come modo per divenire più accessibili. In particolare, il paper analizza le potenziali opportunità che l'utilizzo di queste tecnologie in ambito musueale permette di cogliere e come queste possano facilitare la fruizione dei servizi museali.*

Risultati. *Il presente paper delinea alcune possibili linee guida per utilizzare in maniera proficua le nuove tecnologie di "making" all'interno di un'organizzazione museale.*

Limiti della ricerca. *Il paper presenta un lavoro prevalentemente esplorativo, volto a delineare alcune modalità di utilizzo di nuove soluzioni tecnologiche, in assenza di una ricerca empirica che ne permetta una valutazione dei risultati.*

Implicazioni pratiche. *La parte finale del paper, anche se rivolta prevalentemente alla gestione delle problematiche di accessibilità dei musei, presenta riflessioni che possono risultare utili anche per altri soggetti operanti all'interno del settore culturale.*

Originalità del lavoro. *Il lavoro affronta le tematiche della prototipizzazione rapida, e delle tecnologie ad essa connesse, sviluppando alcune riflessioni con riferimento ad un settore nel quale esse non hanno ancora trovato un effettivo sviluppo.*

Parole chiave: *musei; accessibilità; gestione culturale; prototipizzazione rapida; modellazione 3d; sesta*

Objectives. *The authors do analyze how the various technologies used today in rapid prototyping processes, focusing mostly on the 3d-printing and 3d-scanning ones, can be used by museums in order to overcome their main accessibility-related weaknesses.*

Methodology. *After a first section used to present the main characteristics of the museums, and to define the main, different new technologies used in rapid prototyping processes, the authors focus on the different ways museums can used them to become more accessible. In particular the authors analyze the potential opportunities these technologies give to museums and how they can help them in providing cultural services.*

Findings. *This paper defines some guidelines to exploit these new "making" technologies in museum's organizations.*

Research limits. *This paper is just an explorative work, it aims to define some of the possible ways to use these technologies but it is not based on an empirical research to evaluate the related results.*

Practical implications. *The last part of the paper, even if mostly built around the specific need of making museum organizations more accessible, gives some general considerations that could be used in providing other cultural services.*

Originality of the study. *This work deals with the topic of rapid prototyping, and the related technologies, defining some ideas on applying them in a specific industry that is still not using them effectively.*

Key words: *museum organizations; accessibility; cultural management; rapid prototyping; 3d modeling; sixth*

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1. Introduction

Each morning the employees opening an Apple Store have to carry on several tasks in order for the store to be ready for the first customer. One of these tasks is to check that all the laptops' screens are precisely aligned at 76°. The management of the Cupertino based corporation has chosen this very same angle as a way to drive customers into interacting with their own devices and to overcome their habit into not touching the "exposed models". According to Gallo (2012) this choice has been made to help the customers get a fuller, multi-sensorial, experience of the products as a way to become more involved with them and get a better comprehension of their main characteristics.

At the same time in almost all the museum organization worldwide, visitors are only allowed to see the various exhibits, and often they have to keep a significant distance from the shrines protecting them as well. These various limitations to the visitor experience are needed as the museum organizations have to preserve their collection, as a direct interaction with the visitors can damage them or, in the worst case, in their loss.

One possible solution to enhance the visitor experience without endangering the museum endowment would be to use replicas and reproductions. This topic is not a knew one in museum management; on one side Benjamin, in his seminal work (1955), adversed the idea of using replicas stating that they weren't suitable substitutors for the originals as even the most perfect replicas are lacking its *hic et nunc* (here and now in latin) that is tightly linked to the place where it is and that are the real roots of its authenticity. On the other side Beier-de Haan (2011), Head of Collections and Exhibitions Curator for the German Historical Museum, used the same reasons to justify using reproductions of poster, photos, and documents in an exhibition on Hitler and the Germans even if the museum had the originals and could have shown them.

But this is only one of the main "barriers" that do not let visitors access fully the cultural heritage exposed in a museum; these institutions do not have an effective way to overcome these barriers so they are limited in fully accomplishing their own social functions (Walters, 2009).

In this paper, after a first theoretical section used to frame the issue of accessibility for museums and a second one to present the different rapid prototyping technologies that these organization can get access to, we discuss how these very same technologies can be considered as one of the main driver for creating a new series of cultural services that can be used to provide a multi-sensorial experience to visitors and, at the same time, can make the collections more easily accessible.

2. The social function of Museums

The role of museums in the society has changed over the years. These organizations were initially created as a way for private collectors to store the various artifacts that they had previously gathered and these collections were not supposed to be visited by other people (Simpson, 2007). Today museums are expected to be open to everyone and attract all sorts of people (Martins, 2012).

As a matter of fact, the International Council of Museum (ICOM) defines a museum organization as a "non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment".

Solima (1998, 2000) holds that the ICOM definition gives equal dignity to the various activities each museum organization have to carry on in order to full-fill their social function in the modern societies, that is to contribute to the cultural development of the community as a whole creating and communicating a whole body of knowledge. Ballantyne and Uzzel (2011) affirm that this definition marks an evolution in the museum social function, moving away from the idea of an institution entrusted with the purpose of storing, caring for, and exhibiting heritages to a new, broader, concept as a non-formal educational institution engaging visitors with findings and experiences.

The above mentioned evolution of the function of museums has been highlighted by Boon Yang, Minister of Communication and Information of the Singapore Government, during the opening speech of the Asean Museum Directors' Symposium (Boon Yang, 2007); he states that museums have to be seen as a nexus of different roles in the society that are not only a factor making a tourism destination more attractive, but they have to embrace their role as centers of learning, as coordinators of the education activities of several different stakeholders, and as gateway to cultural exchange. As a consequence, museums could become an actor in the processes increasing the value of a local area heritage, making easier for the different cultures to understand, and accept, each other. On the same page, De Luca (2007) highlighted that when museums do successfully accomplish their educational function, they help in engaging citizens in protecting the local cultural heritage while, at the same time, making them understand diversities.

Moreover, the increasing competition in cultural tourism and heritage has driven museums to compete for the visitors' attention, both in the local area and abroad, asking them to develop innovative presentations of their collections and exciting curation to offer a memorable experience (Bonacini, 2011). This new trend in museum management has driven many organization to adopt a *visitor-centered* approach to their services (Solima, 2014). These institutions focus their efforts in understanding the visitor motivations, their needs, and how to increase their satisfaction in order to deliver satisfying experiences (Goulding, 2000; Ballantyne and Uzzel, 2011).

In this evolution, museums follow the path of the increasing diffusion of entertainment in other economic and social areas, as the "entertainment content" become a meaningful part of a bigger social process (Wolf, 1999; Addis, 2002). These processes will have to be designed in order to conjugate the educational elements with the emotional ones, in order to become the building blocks of complex learning processes that can be considered as *edutainment* (De Luca, 2007).

In these new scenarios, the consumption of art and culture requires more and more the interaction between visitors and the collections (Addis, 2002). New technologies can be useful in conjugate the educational and the emotional elements in a single complex service (Rheingold 1993; Pine and Gilmore, 1999) as they can help visitors to interact with the heritage endowments, transforming their visit in an experience (Falk and Dierking, 1992; Addis, 2002; Andrade, 2008). Moreover, new technologies help museums in going beyond their physical limitations, to transform them into a network of services that can engage the visitors before the actual visit and will be able to go with them during, and after, the visit (Bonacini, 2011). Using new technologies, as virtual reality, laser scanners and location aware devices, asks for some changes in designing these learning processes; on one side, they asks curators to engage the visitors' different senses in order to give them a more comprehensible communication (Addis, 2002); on the other side, they challenge them in creating richer communication processes without making them less accessible (Cargile Cook 2000).

As a consequence, museums leverage emotions and experiences in providing cultural services as they will be able to offer better, more satisfying services to their visitors (Valdani and Guenzi, 1998, Addis, 2002). At the same time, these new services will require museums to define more complex services, as visitors cannot be seen only as passive subjects but they will have to factor in an active role in these *edutainment programs* (Addis, 2002). An example of this approach has been used by the National Museum of Australia that has developed a museum game app to challenge visitors to work as a team photographing the artifacts, thinking critically about the connections between them and giving them a support in continuing these processes after the visit ends.

Moreover, museums will have to engage visitors in their own decision making processes, in order to take advantage of their participation both in the design phases of new services (Solima, 2008) and during the service delivery ones as visitors will be called to custom-tailor their own services exploiting new technologies (Levialdi Ghiron, Medaglia and Perrone, 2009).

The engagement needed to effectively provide these services will have to affect the various senses of the visitors, using several different communication processes, both verbal and not verbal ones (Kavanagh, 1991; Rovidotti, 2004). One example of these new, more complex services is the Metropolitan Museum programs to engage visitors and increase their interest with interactive

learning initiatives in the galleries that, in some cases, let users break the widespread rule of keeping the distance from the findings (Ingber and Huffman, 2014).

Several authors consider accessibility as one of the main issues in looking at museums as actors entitled to educational processes (De Luca, 2007; Walters, 2009; Solima, 2012; Rappolt-Schlichtmann and Daley, 2013). Factors limiting the museum's accessibility can be really different, ranging from the physical barriers hindering a part of the visitors to have access to expositions (Vescovo, 2002) to some more cognitive ones, limiting the visitors' capability to get the full benefit from their visit, i.e. cognitive (Addis, 2002) and information-related barriers (Rovidotti, 2004).

Dodd and Sandell (1998) identified eight different classes of "access" that museum management should try to warrant to the potential visitors to consider their organization an accessible one[1]. According to these authors, the management of an accessible museum has to go beyond taking care of the physical access to the exhibitions but has to create a stable relationship with the organization's stakeholders and create programs able to leverage the local area culture and education level. In particular, the authors identify the need to take into account the "sensorial" access, that is related to the capability of the museums to provide a variety of mediation means, such as hearing induction loops, audio guides, touch tours, information in Braille or large print, subtitled audiovisual materials or interpretation in sign language(s), in order to create exhibitions and events of their museum, that even impaired visitors can experience.

In a similar perspective, Solima (2012), acknowledging accessibility as one of the major challenges that modern museum organizations have to overcome, divides it in four different dimensions (see fig.1): physical, cognitive, economic, and digital .

Fig. 1: The four fundamental dimensions of accessibility
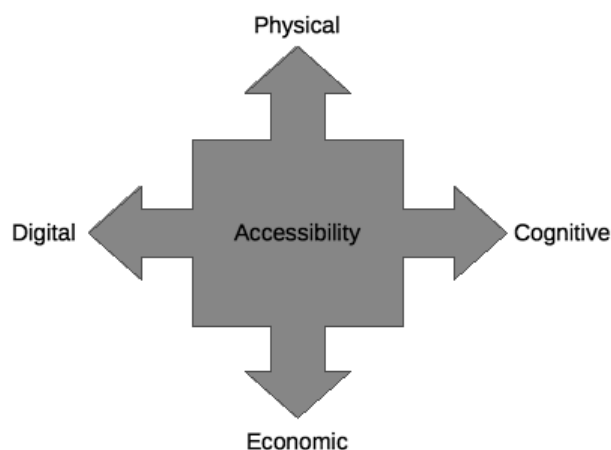
Source: Solima, 2012, p. 24

The first dimension is related to those physical barriers, both internal (f.e. ramps) and external (f.e. parking lots) to the museum's buildings, that can hinder some visitors from easily experiencing these organizations' services. Even if most of the solutions to address the barriers against this accessibility physical dimension asks museums' management for expensive structures, other ways to overcome these barriers can be easily tackled, as shown by the inexpensive ramps fitted in nearly all the steps in the college campuses of Cambridge University (Kaushik, 1999).

The second accessibility dimension highlights the need for these institutions to organize their pedagogical activities in order to be comprehensible to most of the visitors without being prosaic. More precisely, the educational material backing the exhibitions should be able to engage the visitors in a learning process without making them feel "uneducated and uninformed" or they will risk in creating a fracture between the institution and the community alienating those very same

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[1] Dodd and Sandell (1998) identify the following classes of "access" to a museum: physical, information, cultural, emotional, financial, decision-making related, intellectual, sensorial.

subjects it should, instead, engage (Presta, 2010). As a consequence, the inability to be cognitively accessible with the dire consequence that it will not be able to carry on its own social function.

But museums' management has to take into account even the economic accessibility of their cultural services. The museum's activities have to be designed taking into account that visitors' cost are not limited to the "ticket", as they have to incur in other costs to experience a given exhibition, as the travel expenses to reach the local area. Moreover, curators should take into account that visitors have to incur in opportunity costs related to the time, and other kinds of efforts as well, spent in information gathering processes both to organize the travel to the museum location and to gather information on the arts collections that will be shown. A different form of lack of economic accessibility can be found in those organizations asking disabled people to pay for their carers' admission tinckets.

Finally, the fourth dimension of accessibility in museums proposed by Solima is related to the digital one. In order to be considered digitally accessible, museums should not limit their presence in the Internet to a mere re-proposal of their brochures and leaflets online but they should exploit the new possibilities opened by the new digital technologies. As a matter of fact, they should try to build online communities supporting the organization not only as "paying visitors" but as active users, if not co-creators (Prahalad and Ramaswamy, 2013), of the museum's digital content.

3.   Museums and New Technologies

The idea that new technologies can help museums to carry on their social functions in not a new one (Karp, 2004; Solima 2000) and in the last years it has been often inflected looking at the various way these organization can exploit the information and communication technologies (ICTs) as a way to enhance their communication processes and as a way to engage more visitors.

A classic example of this utilization are the various forms of "my galleries" that visitors can build in the museum website, in order to create a tailor-suited tour of a given exhibition; today the value of these solution can be enhanced by the growing diffusion of social network services - as Facebook, Twitter and Instagram - letting visitors share their own experiences with their own friends at home (Solima, 2012). An example of this is the Instagram-enabled campaign created by the MuseumsQuartier Wien, that has asked people to share their own experiences in the various exhibitions using a specific "hashtag" (#mqwien) in order to create a continuous stream of pictures from those visiting the area.

Today, the effects of using ICTs-based technologies in museums can be more and more powerful as most of the visitors bring inside museums their own personal digital devices, as smart-phones and tablets, that can be used to engage them in experiencing the cultural resources in new ways. As an example, the British Museum in London in 2009 has partnered with Samsung UK & Ireland to use augmented reality to help children and young people interact with the museum's collection. Since then, more than 40,000 visitors between the ages of 3 and 18 have used their own tablets and mobile phones to interact with artifacts ranging from Buddhist sculpture to Egyptian paintings, and from clocks to clothing. Another interesting way for museums to engage their visitors has been developed by the Louvre; this museum have developed an app for the Nintendo 3DS, a hand-held gaming device, designed for helping their visitors, as an audio-guide, and letting them create a virtual tour of the museum itself in the comfort of their homes; moreover the application includes both three-dimensional models (3DM) models and high-resolution images of more than 600 piece of arts.

One of the pre-requisite to benefit fully from the opportunities opened by ICTs is to have access to a 3DM of the artifacts that can be later rendered and reproduced using digital devices (Reilly, 1989).

Today, there are several technologies that have been developed to create a 3DM without having to model them using CAD tools that usually go under the label of 3D scanning technologies . These technologies can be roughly divided in two big families: *Optical Range Sensors* (ORS) and *Image Data Sensors* (IDS) (Remondino, 2013).

The first family consist of all the sensors which directly record the 3D geometry of surfaces, giving back a point cloud or a range map that can be used to rebuild the 3D digital model of the scanned objects. These sensors are common in mapping cultural heritage, as they have been used to obtain high resolution models of single piece of arts since the '70s (see Asmus, 1978 for some details on the first experiences). Laser scanners are another ORS technology that is commonly used in the heritage field and often they are coupled with airborne platforms to create a Light Detection And Ranging (LiDAR) system to map bigger structures as buildings and/or corridors as well as smaller artifacts (Kuzminsky and Gardiner, 2012).

The other family is the one of the IDS; these technologies extracts 3D data from several 2D images using perspective or projective geometry formulations (Remondino and El-Hakim, 2006). IDS are usually preferred to scan bigger objects with regular geometric shapes or smaller ones without such constraints.

Today there is a proliferation of commercial three-dimensional digital scanning devices and several of them can use arrays of multiple sensors and techniques in order to achieve more accurate and complete results (Wachoviak and Karas, 2009). An example of these new complex, but affordable, systems is the Google "Project Tango" that in a single hand-held device coupling advanced computer vision, image processing, and special vision sensors with depth perception is able to scan a given environment while moving in it.

Museums can use these technologies to scan their collections developing a new endowment of intangible cultural properties that can be later used in new kind of services and enhanced educational programs (Karp, 2004; Pignatelli, 2013). For example, museums can create virtual tours of fragile environments, as caves with prehistoric art, that could be damaged if opened to visitor (Ballantyne and Uzzel, 2011).

Maybe the most advanced example of carryng on the musum *edutaintment* function recurring to a replica to avoid endangering the heritage resources is being used in the Montignac-Lascaux International Parietal Art Center, the museum in charge of the study and protection of one of the most important archeological sites for prehistoric paintings the caves of Lescaux in France. In the summer of 2016, this museum will open Lescaux-4, a facsimile of the original cave that includes not only a replica of the original caves but a "parietal art theater" that uses screens, objects, light and sound effects to recreate the area's past atmospheres and environments; a 3D interactive cinema; a screen-based art gallery allowing for comparisons between Paleolithic and 20th-century art; and a temporary exhibition space for contemporary art.

Moreover the value of these digital models for the museum organization can become far greater when they are coupled with "3D printing" (3DP) technologies. These technologies have been created for industrial processes, needing to create a working prototype from a given 3DM as fast, and as cheap, as possible. In the last years they have been successfully used in several heritage related fields as anthropology, architecture and restoration (El-Hakim *et al*. 2004; Kuzminsky and Gardiner, 2012; Alessi and Avella, 2013) and are now starting to be used in museums (Monno, 2010). An example of this approach has been used in the Parco Archeologico Sommerso di Baia, close to Naples city in Italy, where replicas of the submerged statues have been used to substitute the statue of the "Ninfeo Sommerso" now safely exhibited in the Castello di Baia.

Moreover, these processes can be used to create objects in several different materials ranging from the more modern ones, as plastic polymers (ABS, PLA, Nylon) and resins (both acrylic and epossidic) to more common ones as ceramic, noble metals (gold and silver) and in general metallic alloys as bronze and brass or the titanium-based ones.

Today there is a large number of different 3DP technologies that differ on the way layers are created and in the materials that they can be used with. Some 3DP produce each layer melting the material they are using as in selective laser sintering (SLS), or direct metal laser sintering (DMLS); other printers start with a liquid material to cure in as in stereolithography (SLA) and in Digital Light Processing (DLP). Another option is to use thin layers of a given material (ranging from paper to metal) and join them together to get the final object as in laminated object manufacturing (LOM). The more widespread technologies is based on extruding plastic filaments in order to print

the object layer after layer (Fused deposition modeling (FDM) or Fused Filament Fabrication (FFF)).

Each technology has specific advantages and drawbacks, that must be takein into account in choosing which to adopt. The main factors to take into account are speed, costs of the 3D printer, of the printed prototype, choice and cost of the materials, and, last but not least, the material's color capabilities.

4.   New technologies and accessibility in museums

The combined effect of digital models of artifacts and cultural heritage and 3DP opens the way for several opportunities that museum can exploit to carry on their social functions in an accessible ways. In this paragraph we will try to highlight some of these opportunities and how they relate with each social function.

Above all, museums - as shown before - has to be physically accessible, taking into account both the visitor needs and the safety of the artifacts. 3DP can be used to address this dimension of accessibility helping sight impaired visitors to get the full benefit of their custom made tours. An example of this solution is Linespace, a 3D-printed display developed by the Human Computer Interaction of the Hasso Plattner Institute; this device will help blind and partially sighted people in interacting with a complex structure printing 3D maps dynamically(Marks, 2016).

But these technologies can be considered particularly useful as they let museums build a whole set of replicas of their cultural endowment to use in several ways.

Moreover, these technologies are not limited to reproduce "exact replicas" of the artifacts but researchers can use them on them in order to create enhanced versions of the piece of arts in order to use them in their researches or in learning processes to other stakeholders. For example, researchers can virtually restore a given artifact to its original appearance letting visitors get a better comprehension of its main characteristics, as it is has been already done in the Museo Civico Archeologico di Bologna (Manferdini and Garagnani, 2011). At the same time, these technologies can help museum educational programs toward blind and partially sighted people creating replicas of the artifacts that these visitors can touch in order to feel for their shape (Hetherington, 2000; Navarro Delgado and Fonseca, 2012).

Researchers can even use these technologies to help in restoring existing, damaged, artifacts as in the case of the Madonna of Pietranico, a 15th-century painted terracotta statue that was severely damaged during the 2009 earthquake when it fell to the ground and fragmented into 19 large pieces and several smaller ones. In this case, the researchers used 3DMs generated with computer vision from previous photographic documentation to guide the restoration process and 3DP to create a basement to accurately hold the remaining fragments in place (Scopigno, *et al.* 2011).

Another way these technologies can create a replica more accessible than the original artifacts is found in the "layered paintings" used to help vision impaired visitors to understand the shapes in paintings (Neumuller *et al*, 2014; D'Agnano *et al*. 2015).

A similar way these technologies can create opportunities for museum is to help visitors in getting multi-sensorial experiences with the artifacts. In fact, 3DP replicas can be easily used to create exhibitions that the visitors can touch and experience more fully than the original shown beyond glass (Di Giuseppantonio Di Franco *et al*., 2015). An example could be the exhibitions of replicas of ancient coins or ancient peoples' personal belongings that visitors could interact freely with as they could be cheaply substituted by the organization if visitors broke them. In these case, the layering techniques used in 3DP gives curators the added advantage that they can discourage theft with RFID tags, or the similar solution of InfraStructs (Willis and Wilson, 2013), directly inside each replica.

Replicas can be useful in many ways for museums addressing accessibility on many ways. Having access to digital models of many artifacts can help in extending, to sculpture or achitecture, the idea behind the "Mostra Impossibile" - an exhibition created with the high-definition replicas of many masterpieces of art that are today in the endowment of many different museum all over the

world - as curators could create new exhibitions grouping together the replicas of statues, or scaled versions of monuments, that are usually located in different places and that visitors could not be able to view in a single travel; these exhibitions can be particularly effective educational tools when they are coupled with augmented reality applications in personal digital devices, as they can be used to show visitors the site in their original state as it has been done with the Temple of and Pollux in Agrigento (Alessi and Avella, 2013).

Moreover, visitors will benefit from the adoption of scaled replicas in exhibitions getting access to new point of observations that they could not usually have in observing the original (Levoy *et al.*, 2000). This way of using scale models in museum's communication process is clearly not a new one; it was already knew in the 19th century as shown in the Museo Archeologico Nazionale di Napoli that stores a 1:100 scaled diorama of the Pompei Site with coloured plasters and frescoes.

Replicas will give curators the possibility to use 3DP technologies to get access to piece of art that could not be easily transported in their institutions. A similar approach has been recently used by the Museo Nazionale Archeologico di Taranto (MNAT) that will show a laser-scanned - 3d printed replica of the Statue of Persephone, that has been in the endowment of the Pergamon Museum in Berlin since the 1915. This solution gives MNAT several advantages: to start, they'll be able to get the replica for a lower price than the original, as the Pergamon will still be able to exhibit the original statue during this period, then they will save on the transportation costs and on the insurance ones as well. Moreover, this solution will benefit visitors in both countries as both of them will be able to see the masterpiece. A different take on this solution would be to use replicas as a way to advertise the museum itself as its curators will be able to use replicas in advertising campaign exhibiting them in public places, as airports or train and metro stations, or in tourism and travel fairs as a way to promote themselves and their heritage endowment.

If the organization do successfully adopt these technologies in internal fab-labs, they will open several other opportunities making the institutional book-shop more profitable activities even if they have not been designed for such uses (Levoy *et al*. 2000). Theoretically, the same 3DM could be used to produce cheap low-quality scaled version of the main exhibitions' pieces in real time; or they can be used to get an high quality reproduction that the more interested visitors could buy as a way to get access to those specific piece of arts even when they are at home. Moreover 3DP could be used to create value added services as letting visitors lightly customize their own 3DP replica using text, or specific incisions.

All these various commercial utilization of the main artifacts in the museum's endowment can be the source of a communication process akin to the word of mouth ones as these objects get shown to the visitors' family and friends or they are shared in their social networks.

5. Conclusions, limitations, and further research opportunities

A primary purpose of this paper was to present the different opportunities that new technologies give to museums' management. The exploratory approach used in this paper highlights that these technologies can help these organization in fulfilling their three main purposes: to carry on studies and researches on the collections, to help museums in creating interesting and engaging educational programs and to entertain the visitors with interesting exhibitions.

The paper has highlighted how broadening the museum's endowments replicas, even if partial and/or scaled ones, can help museums in being more accessible along the various dimensions highlighted by Solima (2012). The structure become more accessible as cheap reproduction of artifacts lowers the need to focus on preserving the artifacts and enable the visitors to have a fuller interactions with the exhibitions.

Nevertheless, the various real-life examples we have reported show that many of these organizations are using these very same technologies as a way to become more effective and more accessible. This drive us to propose a framework to match the opportunities created by these technologies with both the social functions of museums according to the ICOM definition and to the

four dimension of accessibility (Solima, 2012). The results of this analysis has been summed up in the following table 1.

Tab. 1: Some of the opportunities of 3D Modeling and Printing Technologies in museums

		Social Functions of Museums		
		Study and Research	**Education**	**Entertainment**
Dimensions of Accessibility	**Physical**	3DMs from other museums	Dynamic 3D whiteboards 3DPed Scale Models Layered painting	Virtual Tours Augmented Reality App Touch-based interactive workshop
	Cognitive	Study of features with enhanced 3DMs Restoration of broken artifacts	Virtual Tours 3DP of enhanced 3DMs High resolution models	Interactive workshops with replicas Augmented Reality App Internal fab-labs
	Economic	Enhanced 3DMs	3DMs collections	3D tours and games
	Digital	N/A	High definition 3DP	3DPed souvenirs

Source: our elaboration.

Our analysis show that these technologies can effectively be used as a way to tackle effectiveness and accessibility at the same time but the research has brought up some limitations that we think are due consideration.

Since from 1955 some authors have highlighted that the artistic value of the experience of visiting a museum can be lessened when the organization loses the characteristics of authenticity that they are called to uphold (Benjamin, 1955; Sullivan 1998).

Moreover, some authors (Pine and Gilmore, 2007) held that consumers look at museums to satisfy a latent need of authenticity so using fake artifacts and replicas in exhibition, when not limited to specific educational needs, can lead them away. On the same page Ballantyne and Uzzel (2011) that consider in the authenticity of the displayed objects the main distinction between museum and other interpretive center, which is concerned with ideas and stories. The topic of authenticity brings out the need to balance true artifacts with replicas in new exhibitions as a way to create better experiences for the visitors without damaging their vision of museums as the place where to see, and experience, true collections of unique artifacts.

The existence of these different point of views between the theoretical approaches to museum management and the real one let us identify a knowledge gap that can be used to highlight further researches. In particular, this suggest to focus the effort on empirical research to cluster the visitors in order to understand how much they think they can really benefit from these new, enhanced, services they can experience when museums do use 3DS and 3DP.

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Small firms and the digitization of cultural heritage
The case of Centrica and the Uffizi Gallery

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Abstract

Objectives. *The aim of this work is to investigate a case study of a university spin-off that contributes to the debate on the relevance of the use of ICT in contemporary economy, through the relevant case of digitization of cultural heritage of the Uffizi Gallery in Florence.*

Methodology. *According to a long-term case study methodology, we analyse the digitization process from the Nineties until 2014. Data collection integrates semi-structured interviews with information from websites, internal documents, publications, and institutional communication of the museum.*

Findings. *The case study allows to develop interesting implications for the management of enterprises in the new context of increasing use of digital technologies. It highlights the growing opportunities that ICT applied to cultural goods could develop in the future, especially in our country with the widely diffused cultural heritage.*

Research limits. *The work presents a relevant case, nonetheless further investigations are needed in order to shed lights to all the different issues related to the evolution of the analyzed company and the innovation process, in order to extend its results to other firms and contexts.*

Practical implications. *ICT and digital technologies may revolutionize old and traditional businesses and create new markets for Italian companies of Made in Italy and the applications of these new technologies may create new paths for the growth and competitiveness of Italian firms.*

Originality of the study. *The work presents a relevant and an original case study contributing to the debate on the use of ICT in SME, especially analyzing a technological company, that through digital technologies has become a leader in a particular market niche and widely known worldwide.*

Key words: *ICT; digitization; Museum; SME; case study; Uffizi gallery*

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1. Introduction

Since the early developments of information and communication technology (ICT), management scholars have been wondering how this technological revolution could influence the way of competing of businesses (Mc Farlan, 1984) and in particular how ICT changed the creation of competitive advantages (Porter and Millar, 1985; Cash and Konsynsky, 1985).

More recently, the ICT and internet have confirmed this vision and have brought major changes in the management of enterprises (Jemmeson, 1997; Amit and Zott, 2001; Lan, 2004), in communication strategies (Zingone, 2014), in the consumption and purchase behaviours (Confente, 2012; Kotler and Kotler, 2000), etc., hence some authors started to talk about true and proper *digital businesses* (Laudon and Laudon, 2012).

In this context, there has been a growing importance of the studies on digital and ICT technologies in management studies (Gunasekaran and Ngai, 2007; Blacks, 2005) and profound changes have taken place for example in areas such as tourism (Buhalis and Law, 2008), cultural activities such as museums and cultural organizations (Bertacchini and Morando, 2013; Camarero and Garrigo, 2012), but also in e-commerce and online businesses (Drew, 2003; Dellarocas, 2003). This change has influenced firms and managers so much that the performance of firms have also changed in relation to the adoption of ICT (Froman, 2005).

In this context, the new disruptive technologies (Christensen and Bower, 1995) have shaked-out some businesses, creating new segments and new markets (Danneels, 2004). The sector of cultural goods and museums, as mentioned, has witnessed substantial changes brought by new information and communication technologies (Lopez *et al*., 2010) and in particular by the process of digitization of cultural goods and works of art.

In recent years in fact, numerous studies and researches are emerging on the digitization of cultural heritage (EC, 2002), and in our country there are significant business opportunities in the digitization, use and dissemination of digital images of high resolution of cultural heritage (Cappellini, 2014).

Recently, digitization has attracted increasing interest not only in museology and computer science, but also in economics and managerial literature (Minghetti *et al*., 2001; Vom Lehn and Heath, 2005). Scholars have tried to analyse how technological innovation is reshaping the role and mission of museums as producers and distributors of cultural contents and investigate the new business model that emerges. In particular, they investigated how the transition to digitization and the internet are affecting access to and use of digital collections and what are the current challenges and opportunities in this regard (Navarrete, 2013).

The present work aims to contribute to this debate by analysing the case study of a company operating in the field of cultural heritage (Centrica Srl) that, through the devlopment and application of digital technologies, has become a leader in a particular business segment (digitization of image of high resolution) and known worldwide.

We analyse the case of the successful digitization of an Italian museum, the Uffizi Gallery in the city of Florence, where digitization has been conceived as the development and dissemination of digital collections, in a long-term partnership between the local university, a creative ICT enterprise (Centrica Srl) and other technical partners, originating not only new digital cultural products, but also some evidences of cross-fertilization.

According to a long-term case study methodology, we analyse the digitization process from the beginning until 2014. Data collection integrates some semi-structured interviews with information from websites, internal documents, publications, and institutional communication of the museum. The interviews took place with the museum staff and in the firms involved in the digitizing process. At the Uffizi Gallery, two interviews were conducted in 2012 and 2013, respectively with the technologists at the University of Florence who collaborated with the museum in the first phase of digitization (late 1980s-1990s), and with the main external partners (Centrica Srl) which collaboration started in the 2000s. A concluding interview with the Director of the museum was also conducted in 2013. The research site selected is the Uffizi Gallery in Florence, where

digitization strategies mostly concerns the implementation of digital collections and mobile applications.

The case study results allow to develop interesting implications for the management of enterprises in the new context of increasing use of digital technologies. The case study highlights the importance of networking among all four actors of the Quadruple Helix of the local cluster (Carayannis and Campbell, 2009): universities, institutions, enterprises and the local community. It also highlights the growing opportunities for a future development of digital technologies applied to cultural goods, especially in our country, with its widely diffused presence of cultural heritage. There are also growing prospects and opportunities in the digital technologies and in the related business connected to creative industries and cultural heritage (Lazzeretti *et al.*, 2011). Finally, the work presents a successful case of a university spin-off in a period of deep crisis in the country.

After the present introduction, the paper is organized as a follows. In section 2 we present the main evolutionary trajectories in digitization. In section 3 we focus on the digitization process innovation in the Uffizi Gallery of Florence. Finally, the work ends with conclusions and managerial implications.

2. The relevance of ICT and digitization in the cultural sector and in Museums

Several studies have underlined the relevance of ICT for cultural firms and industries. De Laurentis (2006) illustrates a fundamental change of cultural industries, a transformation relating to the dynamics of knowledge exploration and exploitation within the local and global digital value chain. She underlines the potential offered by the exploitation of digital resources in re-engaging peripheral regions, while exploring and respecting regional diversity. She highlights the opportunities for economic growth arising from the commercial exploitation of digital cultural assets in the media, tourism and education industries. Casprini *et al.* (2013) investigate how business models change over time by examining the characteristics of firms in the business of high technology applied to cultural goods.. Also Lazzeretti and Capone (2016) investigate the business of high technology applied to cultural goods in Tuscany, pointing out the relevance of innovation networks and ICT technologies.

In the museum sector, Camarero and Garrido (2008) and Camarero *et al.* (2011) analyse the mediating role of technological and organizational innovation between market orientation and socio-economic performance in Spanish, French, British and Italian museums. They find a correlation between technological innovation and museums' economic performance, where the latter refers to their indirect economic effects, such as the increased attendance at the physical museums, as identified by curators' self-evaluation. Likewise, Bakhshi and Throsby (2010), despite initially claiming for a technology-driven revolution in the value creation process of cultural institutions, do not find evidence of online business modules being implemented at the Tate Gallery, and conclude by hypothesizing the existence of some indirect effects, like increased attendances and enhanced brand visibility.

A more articulated analysis has been recently provided by the Bertacchini and Morando's paper (2013), which discusses four business modules for digital collections based on current experiences at leading heritage institutions. The authors identify four archetypal BMs for access to and use of digital images of artworks, namely online display, proprietary licensing, open licensing and user-generated art images. The authors identify an underlying tension between the objectives of increasing access towards, and extracting revenues from digital collections, highlighting a lack of sustainable BMs based on open access - an aspect also highlighted with reference to digital libraries (Chowdbury, 2013). A similar trade-off between diffusion and revenue generation is also emerging for the case of multimedia tours and mobile applications, as "experience to date has shown that apps and other mobile products that are free to the end-user achieve greater usage rates than those with a charge" (Burnette *et al.*, 2011).

To conclude, we note that the main approach to digitization emerging in the European context wherein digital heritage contents are produced in the museum for collection management purposes and then disseminated through the Web (Kéfi and Pallud, 2011). Instead, in North America and in Canada prevails a participatory perspective, wherein museum professionals are involved not only in the mere provision of contents, but also in concept design, whilst technology developers exert in turn a strong influence on curatorial choices of display and communication (Proctor, 2010).introduction of new technologies of ICT has been advocated as a fundamental support to the reorganization of museums and big Internet players such as Google Book Search and Google Art Project dominate the international scene (Bonacini 2013).

Since the 1990s, the diffusion of interactive multimedia tools has opened new opportunities for enabling people to select the information contents desired and for recreating immersive and stimulating experiences (Barry, 1999). In the 2000s, the emergence of cyber-museology has enabled online access to museum collections, whilst de-constructing academic criteria of classification and linear representations, allowing visitors to associate and remix exhibits according to personal meanings (Cameron, 2003). Most recently, the advent of the Web 2.0 has multiplied the spaces and opportunities for a two-way interaction between the museum and its audience, as well as the sharing of experiences among visitors. However, so far such facilities have found limited applications due to a certain resistance by museums in letting go of their authority on the interpretation of the objects (Lopez *et al.*, 2010). As regards onsite visits, the diffusion of mobile-based, augmented reality applications have enriched the variety of interpretive tools and media available to the visitor (Din and Hecht, 2007).

In Europe digitization projects have been financed so far mostly by public funding, whether it be through regional, national or European projects. A milestone was the DIGICULT project concluded in 2002 (European Commission, 2002), which aimed to assess the social potential of digitization and to encourage the identification of common technical references. An increasing number of R&D projects have then followed, among which "Europeana" stands out with its attempt to establish a common digital library. Moreover, the idea that digitized items and metadata should be made public on an open basis in order to enhance access to the collective memory is gaining increasing consensus in the cultural field, also in connection with the rise of "creative commons" models of copyright management (Verwayen *et al.*, 2011).

In sum, in the first historical phase the digitization of cultural artefacts and museum collections (2D digital format) was mostly considered as a means to spread access to cultural contents and enable an "unlimited audience" (Keene, 1998) to enjoy replicas of artefacts and museum environments from a distance through the Internet, thus avoiding the spatial and temporal limitations of the actual visit to heritage sites or museums. However, the emergence of new technological trajectories such as multimedia exhibits, Web 2.0 spaces, virtual reality models and mobile applications has fostered the emergence of a debate regarding the impact of ICT on the interpretation of cultural heritage.

3. The digitization process in the Uffizi Gallery: the case of Centrica Srl

The Uffizi Gallery is one of the most ancient and important art galleries in Italy and Europe. The building was designed and realized in 1560 by Vasari under Cosimo I Medici. The Uffizi Gallery has been declared national museum since the Italian Unity in 1861, and is currently part of the *Polo Museale* of Florence.

Stably featuring among the 10 most visited museums in Italy, the Uffizi Gallery has experienced a substantial stability in visitor numbers - on average, about more than 1.25 million paying admittances per year, with a slight increase after 2005 (MIBAC, 2012) (Fig. 1). This important site is situated in one of the most important Italian city of art and museum cluster (Lazzeretti and Cinti, 2009), where also a Technological District on Cultural Goods (Salimbeni,

2011) was founded by the Tuscany Region, specialized in high technology applied to cultural goods (Lazzeretti and Capone, 2016).

*Fig. 1: Evolution of paying and total visitors at the Uffizi, 2002-2012*
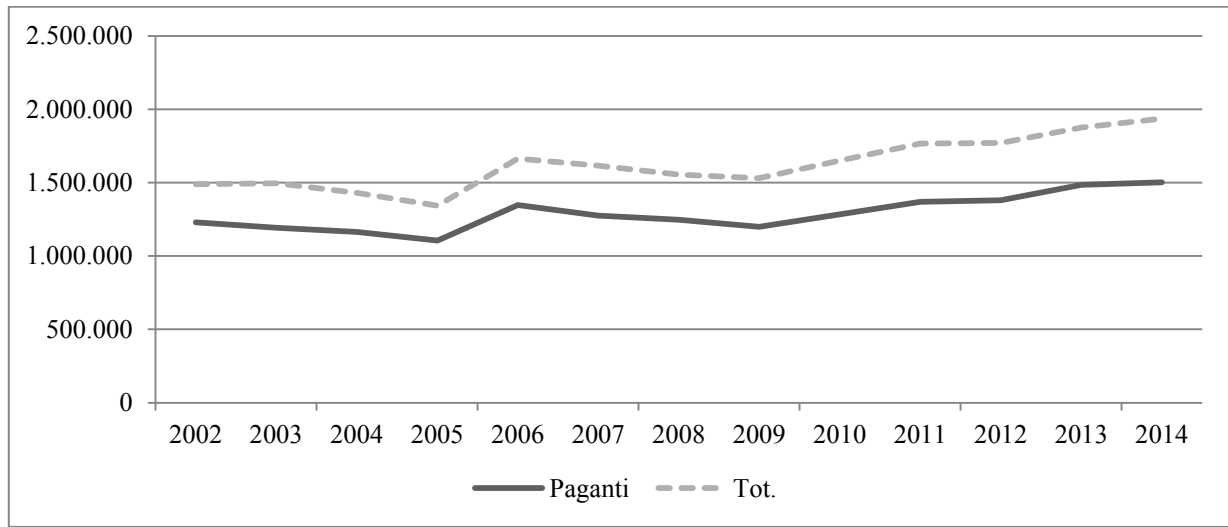
Source: author's elaboration on data of the Italian Ministry of Cultural Heritage.

The case of digitization of Uffizi through the case of Centrica is organised as follows. The next paragraph describes the first phases of digitization of the cultural goods in the Museum from Eighties to Nineties before the foundation of Centrica. These were the very first initiatives of computerization of image in the Uffizi. The following section describes the support and the activities developed by Centrica for the digitization of the Uffizi, after its foundation and underlines the success of the selected *case study*. It illustrates also the following activities realised by the Italian firm and the new developed technology, underlining also other business where, Centrica enters thanks to its new technology of digitization.

The evolution of the role of Centrica is illustrated in Figure 2, presenting the financed project developed by the firm and the different activities realised in the digitization of the Uffizi.

Fig. 2: The role of Centrica in the Uffizi digitization and beyond
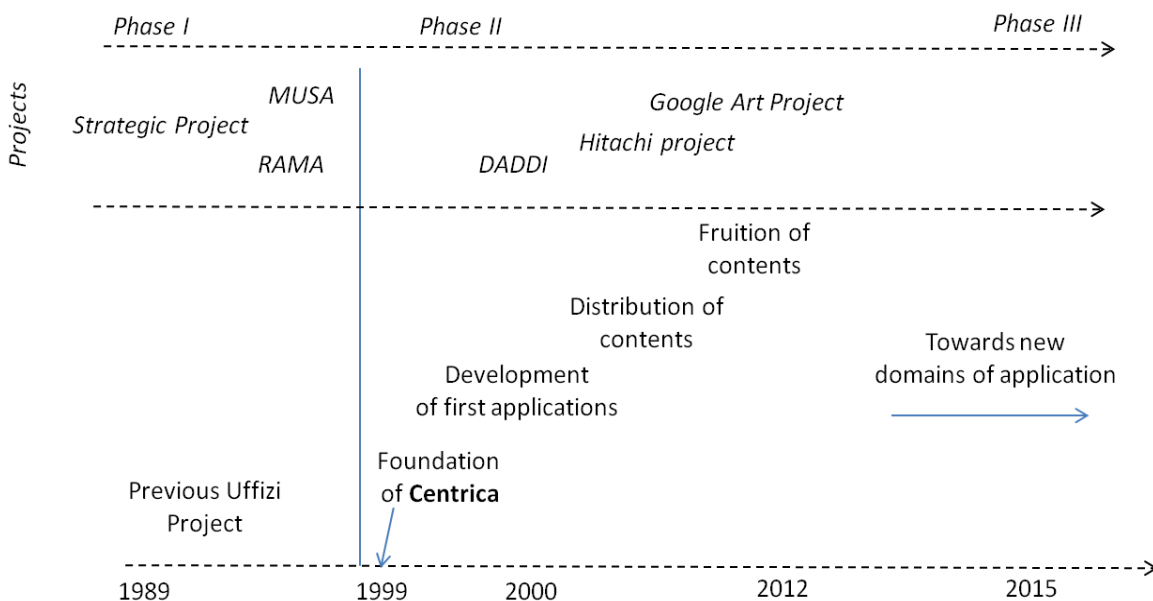
Source: our elaboration.

3.1 Phase I: the first projects of digitization at the Uffizi (1989-1999)

The first project of computerization at the Uffizi Gallery dates to 1989. The Uffizi Strategic Project was launched by the Superintendence and the Director of the museum with the aim of upgrading and adapting a newly acquired areas for exhibition purposes, allowing at the same time a further expansion of the museum.

The project included four main axes of intervention[1]. It offered an opportunity for testing and validating innovative techniques developed by the projects' scientific partners: the Department of Information Engineering of the University of Florence (DIE) and the National Council of Research (Cappellini, 1993).

The Uffizi Strategic Project demonstrated the willingness of the public cultural administration to experiment with innovative technologies adopted at the time by local research labs.

In particular, digital imaging had represented one of the main areas of specialization of DIE for almost two decades, having emerged from the convergence of optics, electronics and computer sciences. In this early phase of research, cultural heritage was considered as a relatively new field of application with respect to more established ones (as X-ray radiography or robotics, etc.). In this context, the main potential for the computer was identified in the mere acquisition of artwork images (Cappellini *et al*., 1978). The first tests had been conducted autonomously at the Lab of Digital Images since the late 1970s yielding technically encouraging results, which allowed the developers to sensitize cultural professionals about these potentials through scientific publications. In this context, this first initiative provided the first opportunity for conducting tests in collaboration with a museum, which was formalized through the establishment of a Department of New Technologies for Artworks (DNTA) at the Uffizi, with the mission of transferring digital imaging expertise from DIE to the users.

In 1994, the partnership was strengthened through the joint participation of the Uffizi, DIE and SIDAC-STET (a branch of the State-owned IT group FINSIEL, then acquired by the Telecom Italia group) to two pilot European projects of museum automation and digitization, namely Remote Access to Museum Archives (RAMA) and MUSA-ESPRIT. The former had the objective of connecting the existing databases of leading European museums through telecommunication networks, enabling different forms of research and data exchange from remote.

MUSA-ESPRIT focused more specifically on the development of digital imaging techniques for the remote diffusion of cultural contents, especially with the aim of improving the links between museums and the publishing sector within the value chain of multimedia publishing. The main achievement of MUSA was the development of the "VASARI" scanner by DIE and its installation at the Department of Technologies of the Uffizi. VASARI consisted in a black-and-white, high-resolution (300 ppi) camera that allowed to reconstruct colour images, and was characterized by a higher level of chromatic fidelity compared to earlier devices. This application was initially envisioned as a valuable support to preservation and restoration activities, fulfilling the necessity for the museum to gather a diagnostic expertise capable to converge into a database.

Within MUSA, a smaller version of the unwieldy equipment was developed by a British firm under the guidance of DIE and the National Gallery. A software system of colour certification was developed, which enabled to compare the colour of digital images with that of "real" artworks. The resulting digital images were thus inserted into the Uffizi database and made accessible to members of the network.

The achievement of these goals also marked the end of the experience of the Department of New Technologies for Artworks, which was deemed to have successfully accomplished its function and was discontinued in 1999.

These three project they were all financed by public institutions and therefore all they activities were related to this time of operation. At the end of the projects the activities developed were normally devoted to end.

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[1]   a) the monitoring of environmental conditions in the exhibition rooms; b) the analysis of the state of conservation of artworks; c) the automation of data collection; d) their remote diffusion.

3.2 Phase 2: the birth of Centrica srl and its activities

In 1999, Marco Cappellini and three other partners established the firm Centrica srl, which was to catch the opportunity offered by the rise of Internet, digital imaging and multimedia applications, focusing on cultural heritage.

The main initiative in this period was the Digital Archive through Direct Imaging (DADDI) project, started in 2000 by the Uffizi, DIE and Centrica, with the technical sponsorship of Phase One A/S (Denmark), and the financial support of Toppan Printing Co. Ltd (Japan).

DADDI aimed to define a standard procedure for the direct digital acquisition and processing of artworks involving functions such as lighting control and chromatic correction. The project involved the acquisition of all the artworks exhibited at the Gallery (at a minimum spatial resolution of 8000 x 8000 pixels) and their insertion in a digital archive in multiple resolutions for specific types of utilization (research, restoration, database management, etc.) (Acidini and Cappellini, 2008). This was the very first project of acquisition of high resolution images at this technological level. It was also one of the first initiative of this technological complexity at European level for a Museum of this size.

The actual acquisition phase was performed by Centrica, under the guidance and supervision of the Uffizi and DIE and using hardware and software equipment provided by the technical sponsors[2]. As DADDI showed a more marked focus on the opportunities for diffusion and commercialization of digital images, copyright management issues were addressed by testing a "digital watermarking" technique - consisting in the insertion into the digital image of an identifying field that is invisible to the user, but can be easily tracked and decoded by the owner (Barni and Bartolini, 2004) so as to control the further utilizations of the file.

In 2007 started a new digitization project focused on masterpieces. The project, promoted by Hitachi, MICC and again Centrica and still active today, is creating a set of very high-resolution images of works of art (1000-1200 ppi) in the *Polo Museale Fiorentino*, mainly from the Uffizi Gallery.

Between 2008 and 2009, digital images have been integrated into digital museum cards - i.e., the descriptive labels containing all the information related to specific artworks, including restorations and movements - for which a consultation software has been specifically developed by the firm *Parallelo* in order to simplify the retrieval and management of the collections (Sframeli and Parallelo, 2009). Whilst the information are used internally for documentation purposes, they have also been made available to the public through a dedicated section of the website.

a) Centrica's technologies for distribution

Centrica has specialized in the development of computer-based systems for the remote distribution of digital images.

The first system of this kind was launched in 2000 with the name of *XLimage*®. It consists of an Internet server that enables the high-resolution visualization of digital artworks with different modalities (Intranet, Internet, mobile). It incorporates a colour management system that limits chromatic alterations in the migration across different devices, and a watermarking technique based on the insertion of an alphanumeric code in the file. Following the previous experience of collaboration, the Uffizi were one of the first adopters of *XLimage*®, using it for distributing images through the museum website.

The following advancements concerned the design of an integrated system of access to digital collections, which was launched in 2005 as *XLphoto*®. With respect to *XLimage*®, this product includes a set of additional features such as an automated and customized facility for the commercial licensing of cultural contents on the basis of a set of parameters (type and country of

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[2] They were joined by a further leading Japanese corporation in the following phases of the project.

publication, exclusivity of use, size and position of the image in the publication) and a database-driven search engine (*XLspider*[®]) that enables to track digital watermarks.

As these characteristics promised to facilitate the distribution and licensing of digital images to the publishing industry, *XLphoto*[®] was experimented by the Uffizi to manage requests by external buyers.

The most recent direction in product development at Centrica has targeted the integration of software systems for the distribution of digital artworks with hardware interfaces, in order to provide a complete experience of fruition.

To this purpose, a new product named *Ars Touch* was launched in 2008, consisting in a PC workstation that runs the *XLimage*[®] software, connected with a touch screen that allows the visualization in high resolution and the interactive exploration of digitized artworks. *ArsTouch* has been mostly used in cultural events at Florentine institutions to offer visitors the possibility to visualize paintings or other visual or textual materials.

b) Centrica's technologies for fruition

Uffizi Touch[®], maybe is the most relevant and known application developed by Centrica, based on the *ArsTouch* platform. *Uffizi Touch*[®] is an interactive software application launched in 2010 that gives access to the museum's digital archive (Cappellini *et al*. 2010).

Through a touch screen available in three size formats ("totem", "wall" and "studio"), the system enables the visualization in high resolution (between 40 and to 150 megapixels) of over 1,100 artworks belonging to the collection, which can be searched and browsed by author, title, historic period and museum room - though de-contextualized from the actual museum environment.

The software has been entirely designed by Centrica and descriptive cards of the artworks in Italian and English have been realized by Centrica and verified by the museum, which has made an agreement with the firm under a royalty calculated as a percentage of the unit price of the installation.

Starting from 2012, the system has also been distributed as a mobile application for iPhones, iPads, etc. An updated version of the *Uffizi Touch*[®] has been launched in 2012 with additional functions based on the new *XLknowledge*[®] platform - developed by Centrica with the industrial partner EntiaLab (Laboratory for Applied Ontology) of the University of Florence - such as the thematic search facility and the dynamic suggestion of artworks according to specific iconographic elements, such as jewellery, landscape or pieces of furniture.

From the Museum's point of view, *Uffizi Touch*[®] enables an accurate analysis of the artist's technique and the state of preservation of the pictorial surface, which in turn can support the diagnostic phase and the critical exercises. For users (and technology developers) it represents a new modality of fruition that overcomes the usual constraint of the physical visit (opening times, crowding, lighting conditions, etc.).

Moreover, *Uffizi Touch*[®] represents an exception within the current scenario of museum mobile applications because it works before, during and after the visit. The mobile applications and smart-phones provide first of all information for visit planning purposes (opening hours, ticket fees, events, etc.); then they include multimedia resources and interpretive tools (descriptive cards, audio tours, podcasts, videos, etc.) assisting the visit experience (Burnette *et al*., 2011); finally, in the post-visit phase, they offer opportunities to expand one's knowledge of specific or related artworks at home. To this purpose, bookmarking facilities have been introduced through which the visitor can select artworks and related interpretive materials to be consulted after the visit on the museum website (Marty, 2011). A parallel direction of development refers to social interaction facilities, like the sharing of comments with other visitors through social networks, either in real time or after the visit (Proctor, 2011).

Consistently with their focus, so far *Ars Touch*[®] and *Uffizi Touch*[®] have best deployed their potential in situations that are unrelated or substitutive to the actual museum experience, but also as a promotional opportunity for Italian heritage.

For instance in 2010, the *Uffizi Touch* was selected by the Commission of the Italian government for the World Expo 2010 to implement *Uffizi*, a virtual exhibition for Shanghai Art Museum. In 2012, a series of virtual exhibitions were organized in Japan and Centrica inaugurated a dedicated 'Space Italy' section at the National Museum of China in Beijing (Fig. 3).

Fig. 3: Picture from a virtual exhibition organized by Centrica at Shanghai (2010)

Source: www.centrica.it.

The peculiar character of *Uffizi Touch*[®], within the museum app scenario is indirectly confirmed by the fact that, in the same period, the *Polo Museale* authorized another mobile application named *Uffizi* by the local ICT firm Parallelo, which has also developed the system of consultation for digital museum cards and the museum website. The product combines three functions within the same device: a mobile tour guide, a digital collection and an educational tool.

The application includes four modalities of exploration: *map*, which displays the most representative rooms of the museum and lists the exhibited works; *works*, which enables the visualization of 33 masterpieces from the collection with related descriptive cards; *museum*, providing practical information for visit planning such as opening times, ticket fees, directions and reservations; *news*, including a calendar of the events at the museum.

Similarly to *Uffizi Touch*[®], a smaller selection of images in high resolution belonging to the digital archives and descriptive texts are provided by the *Polo Museale*.

The promotional material presents its possible functions before, during and after the visit, stressing more complementary than alternative utilizations (Parallelo). In this light, the two applications seem to intervene in distinct contexts, allowing the museum to differentiate its interpretive and promotional strategies: whereas *Uffizi Touch*[®], acts mostly as a "visiting card" for the museum, *Uffizi* offers a support to the visit experience.

Furthermore, the Uffizi have been the first Italian museum to subscribe to Google Art Project in 2011, where 73 digital artworks are currently shown, besides a virtual tour of selected rooms.

3.3 Phase III: from cultural heritage towards new domains of application

The versatility of digital imaging techniques is confirmed by the multiplicity of applications that Centrica has envisioned for its visualization system, targeting a range of sectors in which a high-quality distribution of digital images is required.

Some examples come from the health sector, e-commerce, Made in Italy and tourism. In the heath sector, *XLimage*[®] offers the possibility of publishing large-sized radiological images to allow remote access for specialized consultation purposes, tele-didactics with databanks, reference cases, studies and researches. For instance, one of the main user of XLimage in the medical field is Milan

Lab, a research centre established at AC Milan Football Association for the optimization of players' psycho-physical conditions and performance.

A further potential field of application envisioned by the producer is the improvement of publishing workflows, especially as concerns the pre-press phase. *XLimage*® is also presented as an opportunity for the manufacturing industry, especially in the area of marketing and customer management.

Similarly, the system is claimed to offer a new e-commerce experience. An *ArsTouch* installation incorporating *XLknowledge*® has been used for enhancing the visual presentation of products during the 400th anniversary of the *Officina del Profumo - Farmaceutica di Santa Maria Novella* in 2012.

A new interactive, multi-functional retailing application based on the *ArsTouch* platform has been recently applied to the tourism sector with applications for smartphones and tablets. Eventually, a second spin off in the Made in Italy sector has taken start with Centrica's participation: Vidi Trust, a firm founded in 2010 by the Visual Information Processing and Protection group at the University of Siena, focused on the development of anti-counterfeiting techniques, such as label authentication, document certification, and a traceability system for the fashion, food & beverage and pharmaceutic sectors called *ViSeQR*®.

Centrica contributes to the start-up as an industrial partner with its know-how in digital imaging and watermarking methods built in research at DIE and heritage digitization projects, which can be ideally applied to the tracking and geo-localization of labels incorporated in products along the distribution chain.

Finally, it remains to emphasize the firm's growth also evaluating certain indicators of corporate performance. The analysis of the balance sheets of the last decade on the Database AIDA shows as after the birth of Centrica in 1999 - as a university spin-off with a viable business idea, but few concrete aspects as part of the market - after the first few years with revenues around the few hundred thousands, the Centrica turnover grows steadily and in 2010 surpass the range of 1M€, just in the period in which it develops the main digitization research projects, he participates in the foundation of Vidi Trust and in the events worldwide such as the Expo in Shanghai, etc.

The turnover in the following years amounts to this value, but in the last period there is a decrease, due to the economic-financial crisis, involving also Centrica, but less than the other Italian companies. However, other indicators such as Assets and Ebitda show how the company is able to respond effectively to this decline in revenues. This last fact in recent times continues to grow despite the contraction in revenues.

The trend which emphasizes the growth and development of the company, whose activities and its importance can be only partially captured by the accounting figures, given the innovative nature of its business, that are likely to bring significant results in years to come. The company in this period grows considerably, doubles and triples its number of employees on a permanent basis, until arriving to a dozen workers and establishes itself as a reality of small dimension in the digitization of cultural heritage in Tuscany and in Italy.

4. Conclusions

The purpose of this work was to analyse a case of a university spin-off in the business of cultural goods that has developed through the digitization of the Uffizi Gallery in Florence, in order to contribute to the recent debate on the relevance of ICT for contemporary economy.

The longitudinal case analysis highlights several interesting issues either in terms of the use of ICT and digital technologies in firms or in terms of the challenges and opportunities that digital technologies can offer to firms operating in the Made in Italy sector.

A first relevant element is the importance of the local context wherein the innovation process took place. Accordingly with the theory of the so-called Quadruple Helix, in fact, one of the most important museums in Italy, a University, institutions and firms, supported by the civil society, have

developed mutual relationships in order to develop and apply an innovative technology to a traditional low-tech business. This first interesting finding relates therefore to the role played by the local network in the Florentine cultural cluster in promoting and developing this innovation.

Another issue concerns the business in which this innovation has been developed, the cultural goods sector and the related diversification process that has been realised by the analysed company. New digital technologies and ICT, as mentioned, allow to revolutionize a sector like that of Museums and permits through the digitization of cultural heritage, not only a better visualisation of works of art, but better fruitions of Museums, unfolding important perspectives in the art and cultural sectors at the present day. Moreover, such implications are also relevant to other companies and Italian realities, since our country has a widely diffused cultural heritage.

In this context, both Museums and the whole cultural sector prove to have wide potentialities from the applications of ICT and digitization technologies, in order to improve many aspects from the point of view of fruition of our museums or other cultural organizations, also in pre and post-visit periods, and increase visitors and services in museums, that usually are technologically lagging behind compared to their similar in the United States or Northern Europe.

A last issue concerns the managerial implications regarding the development path of the company. The entrepreneur has proven to configure himself as a general entrepreneur, starting with a business idea and then moving away from it. The entrepreneur has always been at the centre of the networks of relationships, as a *focal* company. He has developed firstly the technology in one sector and then went gradually to apply it to new fields and business, very different from the context of initial applications, such as bio-medical, textiles, etc.

This underlines the potentialities of ICT and digitization as enabling technologies that allow to develop applications in different fields and it also highlights the rewarding path developed by the company that, starting from the original opportunity – born as a university spin-off and in a favourable local cluster – has been managed to grow and develop the full potential of the digitization techniques for the enhancement of Made in Italy.

In conclusion, the work presents a successful case of a high technology small firm in the digitization of cultural heritage. However, further investigation is needed in order to shed light on all the different issues related to the evolution of this enterprise, that can emphasize even further how ICT and digital technologies may indeed revolutionise old and traditional business and create new markets and may be a viable way for the competitiveness and growth of Italian enterprises and an opportunity to exit from the current economic crisis in our country.

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