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ΥΠΟΒΑΛΕΤΕ ΤΟ ΑΡΘΡΟ ΣΑΣ

Ο Κυ.Συ.Π. καλεί τα μέλη του και άλλους επιστήμονες, ερευνητές, ακαδημαϊκούς, επαγγελματίες και επιχειρηματίες του κλάδου Πληροφορικής να υποβάλουν τα άρθρα τους για τα επόμενα τεύχη του περιοδικού! Τα άρθρα μπορούν να αναφέρονται σε οποιαδήποτε πτυχή του τομέα των Τεχνολογιών Πληροφορικής και Επικοινωνιών (ΤΠΕ), και να υποβάλλονται σε συνεχή βάση στη Συντακτική Επιτροπή. Οι συγγραφείς θα ενημερώνονται για την παραλαβή του άρθρου και τον προβλεπόμενο χρόνο δημοσίευσης (σε περίπτωση αποδοχής).

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ΜΗΝΥΜΑ
Συντακτικής Επιτροπής

Το 'νιν αντάν να τρώ' την γην,
τρώει την γην θαρκέται,
μα πάντα τζιείνον τρώεται και τζιείνον
καταλυέται.[i]

Αγαπητοί φίλοι και φίλες,

Μετά τα κατακλυσμιαία γεγονότα του Μαρτίου του 2013 η Κύπρος εξακολουθεί να λειτουργεί σε ένα δύσκολο περιβάλλον που έχουν επιβάλει (α) τα λάθη και οι παραλήψεις του παρελθόντος, (β) η ανεπάρκεια της πολιτικής ηγεσίας, (γ) η ασυδοσία και η απληστία μερίδας των τραπεζιτών και (δ) η ελλιπής εποπτεία του τραπεζική εποπτεία αλλά, εξίσου σημαντικά, και (ε) η αλληλεγγύη που έχουν επιδείξει οι εταίροι μας. Όλες αυτές οι «πληγές του Φαραώ» θα είχαν ίσως καταστρέψει μια άλλη χώρα αλλά η μικρή Κύπρος έχει καταφέρει να επιβιώσει σε πείσμα όλων και αρχίζει να βλέπει με συγκρατημένη αισιοδοξία το μέλλον. Η εγχείρηση πέτυχε και ευχόμαστε ο ασθενής να μην πεθάνει.

Οι προκλήσεις εξακολουθούν να είναι τεράστιες όπως τεράστιες είναι και οι θυσίες που θα πρέπει να γίνουν ώστε η οικονομία να ανακάμψει και να επανέλθει στο προ της κρίσης επίπεδο. Εκ του αποτελέσματος η πολιτική ηγεσία του τόπου αποδείχθηκε απροετοίμαστη και αδύναμη να αντιδράσει αποτελεσματικά στις αποφάσεις των εταίρων και των διεθνών δανειστών. Η ολιγωρία στην λήψη ουσιωδών και σχετικά ανώδυνων μέτρων αναδόμησης του κράτους οδήγησε και ανάγκασε τα πράγματα να φτάσουν στο σημείο επιβολής πολύ πιο επώδυνων λύσεων. Στοιχειωδώς θα έπρεπε να διαμορφώσει και να επιβάλει ένα Κυπριακής ιδιοκτησίας Μνημόνιο και παράλληλα να επεξεργαστεί άλλα σενάρια εξόδου από τη κρίση σε περίπτωση μη αποδοχής του από τους διεθνείς δανειστές. Η Ιρλανδία για παράδειγμα επέτυχε να επιβάλει έγκαιρα το δικό της μνημόνιο και η πορεία εξόδου ήταν σχετικά ομαλή. Τώρα, το μόνο που μας απομένει είναι η σκληρή αλήθεια αναγνωρίζοντας ότι στη σημερινή συγκυρία ο πιο σύντομος δρόμος εξόδου από την κρίση και την εποπτεία των διεθνών δανειστών είναι η πιστή εφαρμογή του Μνημονίου Συναντίληψης.

Όπως σημειώναμε και στο προηγούμενο μήνυμα αυτό που προέχει σήμερα δεν είναι η ενδοσκόπηση και η αναζήτηση ευθυνών αλλά η χάραξη της στρατηγικής για την έξοδο από την κρίση και η δημιουργία μιας νέας εποχής κτισμένης σε στερεά θεμέλια, στην αξιοκρατία και τη διαφάνεια. Το υφιστάμενο οικονομικό και κατ' επέκταση κοινωνικό μοντέλο της Κύπρου έχει αποτύχει και τώρα στον 21ο Αιώνα απαιτείται μια αλλαγή υποδείγματος (paradigm shift). Χρειάζεται ένα νέο οικονομικό μοντέλο ανάπτυξης που θα διασφαλίσει ένα πιο ανθρωποκεντρικό κοινωνικό μοντέλο που προστατεύει τους πιο αδύνατους και επιτρέπει, με ένα διαφανές και αξιοκρατικό σύστημα, την κοινωνική ανέλιξη των αρίστων. Θα πρέπει να επιστρέψουμε στις πατροπαράδοτες αξίες της αυτάρκειας του μέτρου και της εργατικότητας. Η επιτυχία θα προέλθει από την αύξηση της παραγωγικότητας και κατ' επέκταση της ανταγωνιστικότητας, θα πρέπει να δουλέψουμε εξυπνότερα και περισσότερο, θα πρέπει να επενδύσουμε στην έρευνα και την καινοτομία.

Όπως χαρακτηριστικά επισημαίνουν ο νομπελίστας Καθ. Χριστόφορος Πισσαρίδης και η οικονομολόγος κυρία Ελενα Παναρίτη σε κοινό άρθρο στη «Huffington Post» η ρίζα του προβλήματος στην ευρωζώνη δεν είναι το κόστος εργασίας και οι τιμές. Η έξοδος από την κρίση και η ανάπτυξη θα προέλθουν μέσα από την βελτίωση της παραγωγικότητας που θα στηρίζεται στην καινοτομία και στην επιχειρηματικότητα. «Η Ευρώπη χρειάζεται επειγόντως περισσότερες επενδύσεις, όχι περισσότερη λιτότητα, η οποία δημιουργεί πιο πολλά προβλήματα από όσα ευελπιστεί να λύσει»

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i. Βασίλης Μιχαηλίδης «Η 9η Ιουλίου 1821 εν Λευκωσία Κύπρου», 177-186. Ποιήματα, 1960. 18.

(Panarites.e.a. 2014). Επενδύσεις και επενδυτές φυσικά αναζητούν ένα κλίμα φιλικό που θα τους βλέπει ως συνέταιρους και όχι σαν τυχοδιώκτες που σκοπό έχουν να ξεγελάσουν τους λιγοστούς ιθαγενείς του τόπου αυτού.

Ψηφιακό Πρωτάθλημα 2013-2014

Ένα ενδιαφέρον παράδειγμα ψηφιακής καινοτομίας αποτελεί και το Ψηφιακό Πρωτάθλημα 2013-2014 το οποίο είναι διαγωνισμός ψηφιακής καινοτομίας (Νοέμβριος 2013 – Ιούνιος 2014) που στοχεύει στην προώθηση της έννοιας της ψηφιακής καινοτομίας σε μαθητές, φοιτητές, άλλα φυσικά πρόσωπα / ομάδες, νεοσύστατες και μικρομεσαίες επιχειρήσεις καθώς και στην ανάπτυξη ανταγωνιστικών καινοτόμων ψηφιακών προϊόντων και υπηρεσιών που συνάδουν με τις προτεραιότητες της Ψηφιακής Ατζέντας ενώ, παράλληλα, προάγονται και θέματα κοινωνικής επιχειρηματικότητας.

Το Ψηφιακό Πρωτάθλημα συνδιοργανώνεται από τον Ψηφιακό Πρωταθλητή της Κύπρου, το Υπουργείο Παιδείας και Πολιτισμού, το Ίδρυμα Προώθησης Έρευνας, το Υπουργείο Ενέργειας, Εμπορίου, Βιομηχανίας και Τουρισμού, την Αντιπροσωπεία της Ευρωπαϊκής Επιτροπής στην Κύπρο, και άλλους εμπλεκόμενους φορείς μεταξύ των οποίων και ο Κυπριακός Σύνδεσμος Πληροφορικής.

Το αντικείμενο του Ψηφιακού Πρωταθλήματος διαφοροποιείται ανάλογα με την κατηγορία των συμμετεχόντων, αλλά ως κοινή παράμετρος είναι η εξοικείωση τους με την Ψηφιακή Ατζέντα και η ανάπτυξη καινοτόμου μοντέλου ή λειτουργικού πρωτοτύπου ή ψηφιακού προϊόντος ή υπηρεσίας στη βάση της Ψηφιακής Ατζέντας. Το Ψηφιακό Πρωτάθλημα περιλαμβάνει τρεις κατηγορίες: (Κ1) Μαθητική Επιχειρηματικότητα, (Κ2) Φοιτητική Επιχειρηματικότητα και (Κ3) Αναπτυξιακή Επιχειρηματικότητα.

Ο σκοπός του προβλέπεται να επιτευχθεί με την παροχή εξειδικευμένων σεμιναρίων που θα υποστηρίζουν την ανάπτυξη καινοτόμων μοντέλων, πρωτοτύπων, ψηφιακών προϊόντων ή υπηρεσιών (ανάλογα με την κατηγορία συμμετεχόντων), που θα συνάδουν με το θεματολόγιο της Ψηφιακής Ατζέντας, και τη βράβευση των προτάσεων που θα διακριθούν σε κάθε κατηγορία. Η βράβευση αφορά σε χρηματικά ποσά αλλά και υποτροφίες σε συναφείς σχολές των πανεπιστημίων της Κύπρου.

Αποκεντρωμένα Εικονικά Νομίσματα: Bitcoin

Τα αποκεντρωμένα εικονικά νομίσματα, (όπως είναι το bitcoin) παράγονται από αριθμητικούς αλγόριθμους, από οποιονδήποτε έχει τις γνώσεις και ικανότητες να το πράξει και έχουν αξία μόνο καθ' όσον οι κάτοχοι ή και οι χρήστες τού προσδίδουν αξία. Σύμφωνα με πρόσφατο αφιέρωμα στον Economist (2014) η συνολική αξία των Bitcoins που βρίσκονται σε κυκλοφορία έχει εκτιναχθεί στα 7,9 δισ. δολάρια, από τα 490 εκατ. πριν από ένα χρόνο, ενώ ο όγκος των ημερήσιων συναλλαγών έχει ενισχυθεί κατά σχεδόν 60%. Το Bitcoin έχει αρχίσει να καθιερώνεται ως ένα είδος «νομίσματος» ή και μέσου ανταλλαγής αγαθών σε βαθμό που οι διάφορες κυβερνήσεις και κεντρικές τράπεζες έχουν αναγκαστεί να μελετήσουν το θέμα και να τοποθετηθούν για να προστατεύσουν την ίδια την οικονομία και τους συναλλασσόμενους. Ως ένα «νόμισμα» χωρίς κρατική υπόσταση και έλεγχο αντικρίζεται με δυσπιστία από τους παραδοσιακούς φύλακες του χρηματοπιστωτικού συστήματος.

Η ομορφιά και καινοτομία του προέρχεται από το τεχνολογικό υπόβαθρο που διέπει κύρια την παραγωγή και δευτερευόντως τη φύλαξη και χρήση του. Η διαδικασία παραγωγής /εκμετάλλευσης (mining) προαπαιτεί γνώσεις πληροφορικής και επίλυσης αλγορίθμων, συνήθως στα πλαίσια ομαδικής εργασίας. Αυτό το χαρακτηριστικό της ταυτόχρονα ελεγχόμενης και ελεύθερης δημιουργικής εκμετάλλευσης (στην κυριολεξία) χαρακτηρίζει τόσο την καινοτομία του bitcoin αλλά και τους κινδύνους που αφορούν στην σταθερή αξία του. Επίσης ο όγκος των αυξανόμενων συναλλαγών δημιουργεί τεχνικά θέματα διασφάλισης, πιστοποίησης και φύλαξης τους και πλησιάζει στα όρια των τεχνικών δυνατοτήτων των 300.000 συναλλαγών την ημέρα.

Η παραγωγή τους γίνεται ανώνυμα και ως εκ τούτου δεν μπορεί να ρυθμιστεί από οποιαδήποτε αρχή. Το Υπουργείο Οικονομικών, το Υπουργείο Ενέργειας, Εμπορίου, Βιομηχανίας και Τουρισμού και η Κεντρική Τράπεζα της Κύπρου σε

κοινή ανακοίνωση τους στις 18 Μαρτίου 2014[ii] παραθέτουν πέντε κινδύνους που ελλοχεύουν από τη χρήση εικονικών νομισμάτων όπως το bitcoin. Σύμφωνα με την ανακοίνωση το εικονικό νόμισμα είναι ένα είδος μη ρυθμιζόμενου ψηφιακού προϊόντος, το οποίο δεν εκδίδεται από κεντρική τράπεζα. Μπορεί μόνο να χρησιμοποιηθεί ως μέσο ανταλλαγής προϊόντων σε περιορισμένο δίκτυο εμπόρων το οποίο ομολογουμένως αυξάνεται με ραγδαίους ρυθμούς.

Η χρήση του όμως εμπεριέχει αρκετούς κινδύνους που συνδέονται με την κατοχή ή και χρήση εικονικών νομισμάτων και περιλαμβάνουν (α) την κλοπή από πλατφόρμα ανταλλαγής (β) την κλοπή από ψηφιακό πορτοφόλι, (γ) ευμετάβλητη αξία μέχρι και μηδενισμό (δ) τον αυξημένο κίνδυνο να αποτελέσουν αντικείμενο κατάχρησης για εγκληματικές δραστηριότητες, συμπεριλαμβανομένης της νομιμοποίησης εσόδων από εγκληματικές δραστηριότητες και (ε) ανάγκη εξέτασης όλων των συναφών παραμέτρων όπως επίσης και γνώση και κατανόηση των σχετικών κινδύνων.

Πολύ σύντομα μετά την πιο πάνω ανακοίνωση από την Κύπρο πέρασε ο κομήτης Neo ο οποίος διέγραψε μια σύντομη, φωτεινή διαφημιστική πορεία και διελύθει εις τα εξ' ών συνετέθει μόλις άρχισε να λειτουργεί κανονικά. Η εταιρεία που φιλοδοξούσε να διδάξει τους Κυπρίους να χρησιμοποιούν το bitcoin λειτούργησε για λίγες μέρες και μετά υπό συνθήκες που διερευνούνται σταμάτησε να

λειτουργεί. Ο ιδιοκτήτης αναχώρησε στο εξωτερικό φοβούμενος για την υγεία του και αυτής των μελών της οικογένειας του και οι εργαζόμενοι στην εταιρεία κατήγγειλαν στην αστυνομία ότι δεν είχαν πληρωθεί για την εργασία τους το μήνα που πέρασε από την Κύπρο ο κομήτης Neo.

Οι οικονομολόγοι υποστηρίζουν ότι το χρήμα πρέπει να εξυπηρετεί τρεις βασικές λειτουργίες (α) να είναι μέσον συναλλαγής που να μπορεί να ανταλλάξει κανείς για την αγορά προϊόντων και υπηρεσιών (β) να αποτελεί ένα σταθερό απόθεμα αξίας για φύλαξη για μελλοντική χρήση και (γ) να λειτουργεί ως λογιστική μονάδα. Μέχρι σήμερα το Bitcoin ικανοποιεί τον πρώτο όρο της λειτουργίας ως μέσον συναλλαγής αλλά δεν ικανοποιεί τους άλλους δύο. Αυτό άλλωστε σημειώνεται στην επίσημη ανακοίνωση της Κυπριακής Δημοκρατίας.

Το Bitcoin δεν αποτελεί σταθερό απόθεμα αξίας αν και διαθέτει τον τεχνικό εξοπλισμό για να λειτουργεί ως τέτοιο, καθώς τα νομίσματά του συγκεντρώνονται σε ένα κρυπτογραφημένο πορτοφόλι μέσα σε έναν σκληρό δίσκο που μπορεί να χρησιμοποιήσει ο χρήστης αργότερα για να κάνει αγορές. Δυστυχώς όμως όπως κάθε τι που έχει αξία υπόκειται σε κλοπή από ψηφιακούς εγκληματίες και υπεξαίρεση από ανήθικους εγκληματίες λευκού κολάρου η οποίοι είναι οι εντεταλμένοι φύλακες και μεσάζοντες. Περιστατικά όπως η πρόσφατη πτώση κατά 6% που γνώρισαν τα Bitcoin στο χρηματιστήριο Mt Gox έχουν πλήξει

την εμπιστοσύνη στο νόμισμα. Η τιμή του υποχώρησε κατά περισσότερο από 30% έναντι του δολαρίου τον Φεβρουαρίου εξαιτίας αυτής της εξέλιξης στο Mt Gox (Economist,2014a, 2014b). Αντίστοιχα προβλήματα έχουν σημειωθεί και σε άλλες περιπτώσεις.

Επίσης το γεγονός ότι η δημιουργία του προέρχεται από την επίλυση αλγορίθμων περιορίζει την δυνατότητα ελέγχου της προσφοράς, στον αριθμό που μπορεί να δημιουργηθεί και επομένως την σταθερότητα της αξίας αφού η αυξημένη παραγωγή μειώνει την αξία του νομίσματος έστω και αν δυνητικά μπορεί να παραχθεί μόνο συγκεκριμένη ποσότητα με στόχο τα 21 εκατομμύρια μέχρι το 2033. Αυτή η πρόνοια έχει στόχο να το προστατέψει από τον πληθωρισμό.

Η ευμετάβλητη αξία του μπορεί να εμποδίσει το Bitcoin να ικανοποιήσει τον τρίτο όρο και να αποτελέσει λογιστική μονάδα. Ακόμη και οι έμποροι λιανικής που δέχονται Bitcoin χρησιμοποιούν άλλα νομίσματα ως κύρια λογιστική μονάδα. Οι τιμές καθορίζονται σε ένα από τα μεγάλα νομίσματα, σε δολάρια για παράδειγμα, και η τιμή του Bitcoin μεταβάλλεται αυτομάτως με τις αλλαγές στην ισοτιμία του κρυπτογραφημένου χρήματος. Ομοίως οι περισσότεροι κάτοχοι Bitcoin πληρώνονται για την εργασία τους σε άλλα παραδοσιακά νομίσματα. Όσο οι αγοραστές και πωλητές του Bitcoin «σκέπτονται» σε ευρώ και δολάρια δεν πρόκειται να έχει το καθεστώς χρήματος. Και μέχρις ότου η αξία του γίνει λιγότερο ευμετάβλητη

i. Το κείμενο βρίσκεται ανηρτημένο στην ιστοσελίδα του Υπουργείου Οικονομικών.
http://www.mof.gov.cy/mof/mof.nsf/All/66538DDDEAAB4088C2257C9F004B1B86/$file/PRESS%20BITCOIN%20%20.pdf

ως προς τα νομίσματα που διέπουν τις πραγματικές οικονομίες, οι χρήστες δεν θα αλλάξουν το νομισματικό πλαίσιο αναφοράς τους. Το ερώτημα αν το bitcoin αποτελεί νόμισμα ή επένδυση είναι ενδιαφέρον. Σύμφωνα με πρόσφατο άρθρο του το Wall Street Journal (McKinnon, J.D. and Tracy, R.,2014) «εάν το bitcoin δεν είναι νόμισμα μπορεί να χρησιμοποιηθεί σαν ένα;» φαίνεται να έχει την απάντηση «ναι αλλά εξαρτάται πως το χρησιμοποιείς».

Φυσικά μακροπρόθεσμα το ηλεκτρονικό χρήμα είναι το μέλλον και όσο αφορά το bitcoin το οποίο έχει δημιουργηθεί σαν νόμισμα απευθείας συναλλαγής (peer-to-peer payments) με κρυπτογραφική επαλήθευση των συναλλαγών το μέλλον φαίνεται να του ανήκει. Η συνέχεια προβλέπεται ενδιαφέρουσα. Περισσότερες πληροφορίες για το bitcoin και τους τρόπους εκμετάλλευσης μπορούν να αναζητηθούν στο https://bitcoin.org/en/ και http://www.bitcoinmining.com/.

Θεματολογία

Η θεματολογία της έκδοσης περιλαμβάνει μια σειρά από ενδιαφέροντα και ποικίλα άρθρα που καλύπτουν ένα ευρύ φάσμα θεμάτων. Η καινοτομία αυτή την φορά αφορά στην παρουσία μιας σειράς σύντομων ενημερωτικών άρθρων για θέματα πληροφορικής στην Κύπρο με τον **Δρ. Ευάγγελο Μονοχρήστο**, νέας τεχνολογίας με τον **Εφραίμ Παναγιώτου**, και καινοτομίας και επιχειρηματικότητας με την Σταυριάνα Κοφτερός.

Η **Αλίκη Καραγιάννη**, δευτεροετής φοιτήτρια στο πανεπιστήμιο St. Andrews στην Σκωτία επιστρέφει με ένα νέο άρθρο με τίτλο "What Changes as Data Grows?". Προσβλέπουμε σε ευρύτερη συνεργασία με τους φοιτητές όλων των Πανεπιστημίων στο άμεσο μέλλον

Οι πανεπιστημιακοί **Δρ. Ανδρέας Αριστείδου**, **Δρ. Ευστάθιος Σταυράκη** και **Δρ. Γιώργος Χρύσανθου** παρουσιάζουν μια ενδιαφέρουσα εργασία με τίτλο "Cypriot Intangible Cultural Heritage: Digitizing Folk Dances" και μας καλούν να ασχοληθούμε με τους παραδοσιακούς Κυπριακούς χορούς.

Η έκδοση συμπληρώνεται με τη ενδιαφέρουσα μόνιμη στήλη του **Δρα. Φίλιππο Πελετιέ** "Do you know these companies" όπου γίνεται μια σύντομη αναφορά σε μια σειρά από πολύ γνωστές εταιρείες της πληροφορικής και του διαδικτύου οι οποίες φαίνεται να έχουν το "right staff" αλλά και το "right stuff".

Επίλογος

Το 2014 σηματοδοτεί τα 100 χρόνια από τη γέννηση και 10 χρόνια από την εκδημία του μεγάλου Κύπριου ποιητή Κώστα Μόντη (18 Φεβρουαρίου 1914 - 1η Μαρτίου 2004). Η Πολιτεία θέλοντας να τιμήσει τον σημαντικό αυτό ποιητή έχει ορίσει το 2014 ως έτος Κώστα Μόντη. Προς τιμή του παρατίθενται εκτενή αποσπάσματα από το ποίημα του «Στιγμές της εισβολής» (Μόντης, 1975).

Είναι δύσκολο να πιστέψω
πως μας τους έφερε η θάλασσα της Κερύνειας,
είναι δύσκολο να πιστέψω
πως μας τους έφερε η αγαπημένη θάλασσα της Κερύνειας.
[...]

Τι γρήγορα που κατάλαβε αυτό το καλοκαίρι
πως ήταν περιττό
και τα μάζεψε κι έφυγε στις μύτες των ποδιών
[...]

Ανασήκωσε την πλάτη
κι απόσεισέ τους, Πενταδάχτυλέ μου,
ανασήκωσε την πλάτη
κι απόσεισέ τους

Χριστός Ανέστη
Πάσχα 2014

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ΝΕΑ ΤΟΥ ΣΥΝΔΕΣΜΟΥ

HACK CYPRUS (5-8/9/2013)

Ο Σύνδεσμος μας στήριξε και φέτος τη νεανική πρωτοποριακή διοργάνωση HACK CYPRUS που διοργανώνεται από το Cypriot Enterprise Link. Συγκεκριμένα, ο Σύνδεσμος επιχορήγησε δώρα βραβεία για τους νικητές, ενώ εκπρόσωποι του συμμετείχαν στην Ημέρα εκπαίδευσης των μαθητών.

Χάλκινο Βραβείο (Σεπτέμβριος 2013)

Χάλκινο βραβείο κατέκτησε στη Μαθητική Βαλκανική Ολυμπιάδα Πληροφορικής που διεξήχθη στο Σαράγεβο της Βοσνίας και Ερζεγοβίνης, ο Κύπριος μαθητής Μιχάλης Χάλιος.Η ομάδα που εκπροσώπησε την Κύπρο, καταρτίστηκε μετά από παγκύπριο διαγωνισμό που διοργάνωσε το Cyprus Computer Society και το Υπουργείο Παιδείας. Τα παιδιά διαγωνίστηκαν στην επίλυση αλγοριθμικών προβλημάτων και προγραμματισμό. Για την προετοιμασία των διαγωνιζομένων τους έγιναν εντατικά μαθήματα πληροφορικής από το CCSI/ECDL και τον Σύνδεσμο Καθηγητών Πληροφορικής.

AGM (4/12/2013)

Στις 4 Δεκεμβρίου, στο ξενοδοχείο Κλεοπάτρα πραγματοποιήθηκε η **Ετήσια Γενική Συνέλευση του Συνδέσμου** για το 2013. Ο Πρόεδρος του Δ.Σ. κος Κώστας Αγρότης μίλησε για τον απολογισμό και η Ταμίας για την οικονομική κατάσταση του προηγούμενου έτους 2012, ενώ όλα τα μέλη του Δ.Σ. συζήτησαν με τους 50 παρευρισκομένους για τρέχοντα ζητήματα και δραστηριότητες.

Ημερίδα Πληροφορικής (15/03/2014)

Για 5η συνεχή χρονιά το Τμήμα Πληροφορικής του Παν/μιου Κύπρου, με την υποστήριξη του Κυ.Συ.Π., διοργάνωσε Ημερίδα ενημέρωσης για το επάγγελμα της πληροφορικής, που απευθυνόταν σε μαθητές Β' και Γ' τάξης του Λυκείου και Τεχνικών Σχολών. Ο εκπρόσωπος του Συνδέσμου κος Γιάγκος Κτωρίδης παρέδωσε διάλεξη για το επάγγελμα, ενώ όλοι οι μαθητές έλαβαν δωράκια και ενημερωτικό υλικό για τη δράση του Συνδέσμου.

Κοπή της βασιλόπιτας (22/01/2014)

Την εκδήλωση για την κοπή της βασιλόπιτας του Συνδέσμου μας φέτος τίμησε με την παρουσία του ο **Υπουργός Ενέργειας, Εμπορίου, Βιομηχανίας και Τουρισμού κος Γιώργος Λακκοτρύπης**. Ο κος Λακκοτρύπης είναι ο πρώτος Υπουργός που προέρχεται από τον τομέα της Πληροφορικής και είναι ο ίδιος, μέλος του Συνδέσμου. Ως εκ τούτου, στο σύντομο χαιρετισμό του, αναφέρθηκε στην ανάγκη για ανάπτυξη και αναβάθμιση του ρόλου των Τεχνολογιών της Πληροφορίας και Επικοινωνίας στην Κύπρο στην Κύπρο και τόνισε τη στήριξή του για την επίτευξη των στόχων του Συνδέσμου. Συγκεκριμένα, δεσμεύτηκε για την προώθηση του κλάδου πληροφορικής στον ιδιωτικό τομέα και εφαρμογή της πληροφορικής και της ηλεκτρονικής Διακυβέρνησης στο δημόσιο τομέα. Τέλος, μοίρασε τα κομμάτια της Βασιλόπιτας και έδωσε τις ευχές του για το νέο χρόνο στα πάνω από 50 μέλη του Συνδέσμου που παρευρέθηκαν στην εκδήλωση.

Διεθνής Εκπαιδευτική Έκθεση (21-23/02/2014)

Όπως κάθε χρόνο έτσι και φέτος το CCS με το ECDL συμμετείχε στη Διεθνή Εκπαιδευτική Έκθεση στους χώρους της Κρατικής Έκθεσης Κύπρου. Φέτος πρωτοτυπήσαμε με μια διασκεδαστική δραστηριότητα για τους νέους που ήρθαν στο περίπτερο για να φωτογραφηθούν με τους φίλους τους στο **Cyprus Photobooth**. Οι φωτογραφίες με τα λογότυπα μας προσφέρθηκαν στο κοινό, ως αναμνηστικό δωράκι.

Ημερίδες Καριέρας στα Πανεπιστήμια (Απρίλιος 2014)

Κάθε χρονιά ο Κυπριακός Σύνδεσμος Πληροφορικής λαμβάνει μέρος σε Ημερίδες Καριέρας για τους φοιτητές που διοργανώνουν δημόσια και ιδιωτικά Παν/μια, ώστε να ενημερώσει για το επάγγελμα της Πληροφορικής καθώς και να προωθήσει το Πιστοποιητικό δεξιοτήτων πληροφορικής ECDL ως μέσο για εμπλουτισμό του Βιογραφικού και εφόδιο της επαγγελματικής σταδιοδρομίας. Τον Απρίλιο CCS και το ECDL συμμετείχαν στην Ημέρα Σταδιοδρομίας του Παν/μιου Κύπρου και στην Ημέρα Καριέρας του Παν/μίου Λευκωσίας.

Ψηφιακό Πρωτάθλημα

Ο Κυπριακός Σύνδεσμος Πληροφορικής (Cyprus Computer Society - CCS) συνδιοργανώνει με το Ψηφιακό Πρωταθλητή της Κύπρου και άλλους εμπλεκόμενους φορείς το πρώτο Ψηφιακό Πρωτάθλημα. Το Ψηφιακό Πρωτάθλημα είναι Διαγωνισμός Ψηφιακής Καινοτομίας με στόχο την ανάπτυξη ανταγωνιστικών καινοτόμων ψηφιακών προϊόντων και υπηρεσιών που συνάδουν με τις προτεραιότητες της Ψηφιακής Ατζέντας για την Ευρώπη.

BEWISER (2013-2015)

Ο Κυπριακός Σύνδεσμος Πληροφορικής, το ΕΤΕΚ και το Πανεπιστήμιο Λευκωσίας συμμετέχουν στο Ευρωπαϊκό έργο με τίτλο BEWISER (**Building Enterprises – Wireless and Internet Security in European Regions**) που ασχολείται με το θέμα της ασύρματης και διαδικτυακής ασφάλειας στα Ευρωπαϊκά κράτη. Το έργο BEWISER ασχολείται με προκλήσεις στον οργανωτικό και τεχνικό ερευνητικό τομέα σε μερικές από τις πιο γνωστές περιοχές της Ευρώπης σε θέματα Έρευνας, Τεχνολογίας και Ανάπτυξης. Ήδη την Κύπρο επισκέφθηκαν συνεργάτες στο έργο από τη Γαλλία οι οποίοι συναντήθηκαν με εκπροσώπους κυπριακών οργανισμών και εταιρειών με τους οποίους συζήτησαν και ανασκόπησαν τις θέσεις και την πολιτική τους για θέματα σχετικά με το έργο BEWISER ενώ μέχρι τις 14 Απριλίου 2014 θα διεξάγεται διαδικτυακή έρευνα ανάμεσα στους πολίτες των χωρών που συμμετέχουν στο έργο και αφορά στη χρήση της ασύρματης διαδικτυακής τεχνολογίας ανάμεσα στους πολίτες.

ΠΛΗΡΟΦΟΡΙΚΗ ΣΤΗΝ ΚΥΠΡΟ

Δρ. Ευάγγελος Μονοχρήστου, vmono1@gmail.com

Τα κείμενα που δημοσιεύονται στην παρούσα ενότητα δεν αποτελούν προσωπική άποψη του γράφοντα ή του Κυπριακού Συνδέσμου Πληροφορικής γενικότερα. Αποτελούν μια σύντομη περίληψη από κείμενα Προκηρύξεων και Προσφορών ή δημοσιεύσεων που έχουν συλλεχθεί είτε από τις επίσημες ιστοσελίδες των αντίστοιχων φορέων είτε από το Ηλεκτρονικό Σύστημα Σύναψης Συμβάσεων (e-PS) και έχουν σαν σκοπό την απλή πληροφόρηση των αναγνωστών.

Ολοκληρωμένο Πληροφοριακό Σύστημα Τμήματος Πολεοδομίας και Οικήσεως

Μέσα στους επόμενους μήνες αναμένεται η έναρξη υλοποίησης του έργου που αφορά την Ανάπτυξη Ολοκληρωμένου Πληροφοριακού Συστήματος και την Προμήθεια Εξοπλισμού για το Τμήμα Πολεοδομίας και Οικήσεως του Υπουργείου Εσωτερικών. Η διάρκεια υλοποίησης του έργου είναι 48 μήνες από την ημερομηνία έναρξής του και περιλαμβάνει ένα έτος εγγύηση καλής λειτουργίας.

Γενικός στόχος του έργου είναι η ανάπτυξη και εφαρμογή ενός Ολοκληρωμένου Πληροφοριακού Συστήματος που θα καλύπτει τις μηχανογραφικές ανάγκες και απαιτήσεις των Τομέων του Τμήματος Πολεοδομίας και Οικήσεως (ΤΠΟ) αλλά και τη διαχείριση Αδειών Οικοδομής από τις Επαρχιακές Διοικήσεις. Το Ολοκληρωμένο Πληροφοριακό Σύστημα αναμένεται να αποτελέσει ισχυρό εργαλείο για την αναβάθμιση των υπηρεσιών που προσφέρει το Τμήμα, με απώτερο σκοπό τη μείωση της γραφειοκρατίας καθώς και του χρόνου απόκρισης των υπηρεσιών στα αιτήματα των πολιτών και, συνεπώς, την καλύτερη και αποτελεσματικότερη εξυπηρέτηση του κοινού.

Ειδικότερα, το έργο περιλαμβάνει:

- την ανάλυση, σχεδίαση, ανάπτυξη, προσαρμογή, εγκατάσταση και συντήρηση ενός Ολοκληρωμένου Πληροφοριακού Συστήματος διαχείρισης, επεξεργασίας και διάθεσης γεωγραφικών και άλλων πληροφοριών και δεδομένων
- τον σχεδιασμό και ανάπτυξη εφαρμογών διαδικτύου (περιλαμβανομένων εφαρμογών webGIS) οι οποίες θα περιλαμβάνουν λειτουργίες ενημέρωσης και δημοσίευσης πληροφοριών, αλληλεπίδρασης και συναλλαγών με πολλαπλούς φορείς και με το κοινό
- την προμήθεια, προσαρμογή, εγκατάσταση και συντήρηση του εξοπλισμού και έτοιμου λογισμικού που απαιτείται για

τη λειτουργία του νέου συστήματος

- την επικοινωνία με Πληροφοριακά Συστήματα λοιπών φορέων, με σκοπό την παροχή και άντληση δεδομένων προς και από τα συστήματα αυτά
- την ψηφιοποίηση μέρους του Αρχείου του Τμήματος (έγγραφα, σχέδια, χάρτες κ.λπ.) και την τροφοδότηση του νέου συστήματος με τα ψηφιακά αυτά δεδομένα, καθώς και τη μετάπτωση υφιστάμενων δεδομένων στο νέο σύστημα
- την παροχή ηλεκτρονικών υπηρεσιών προς τους πολίτες και λοιπούς δημόσιους φορείς
- την ανάλυση των εκπαιδευτικών αναγκών και την επιμόρφωση του ανθρώπινου δυναμικού που αναμένεται να αποτελέσουν τους μελλοντικούς χρήστες του νέου συστήματος
- την ετοιμασία της επικοινωνιακής στρατηγικής του Τμήματος και την εκτέλεση δράσεων για την προβολή και δημοσιοποίηση των υπηρεσιών που θα παρέχει το νέο σύστημα.

Το Ολοκληρωμένο Πληροφοριακό Σύστημα αναμένεται να περιλαμβάνει τα ακόλουθα υποσυστήματα:

- Applications & Permits Management System
- Contract Management System
- Legislation Management System
- Appeals and Objection Management System
- Geographical Information System (GIS)
- Project Management System
- Management Information System (MIS)
- Central Management System

Ακολουθεί η σχηματική απεικόνιση του προς ανάπτυξη συστήματος και των διαφόρων διασυνδέσεων:
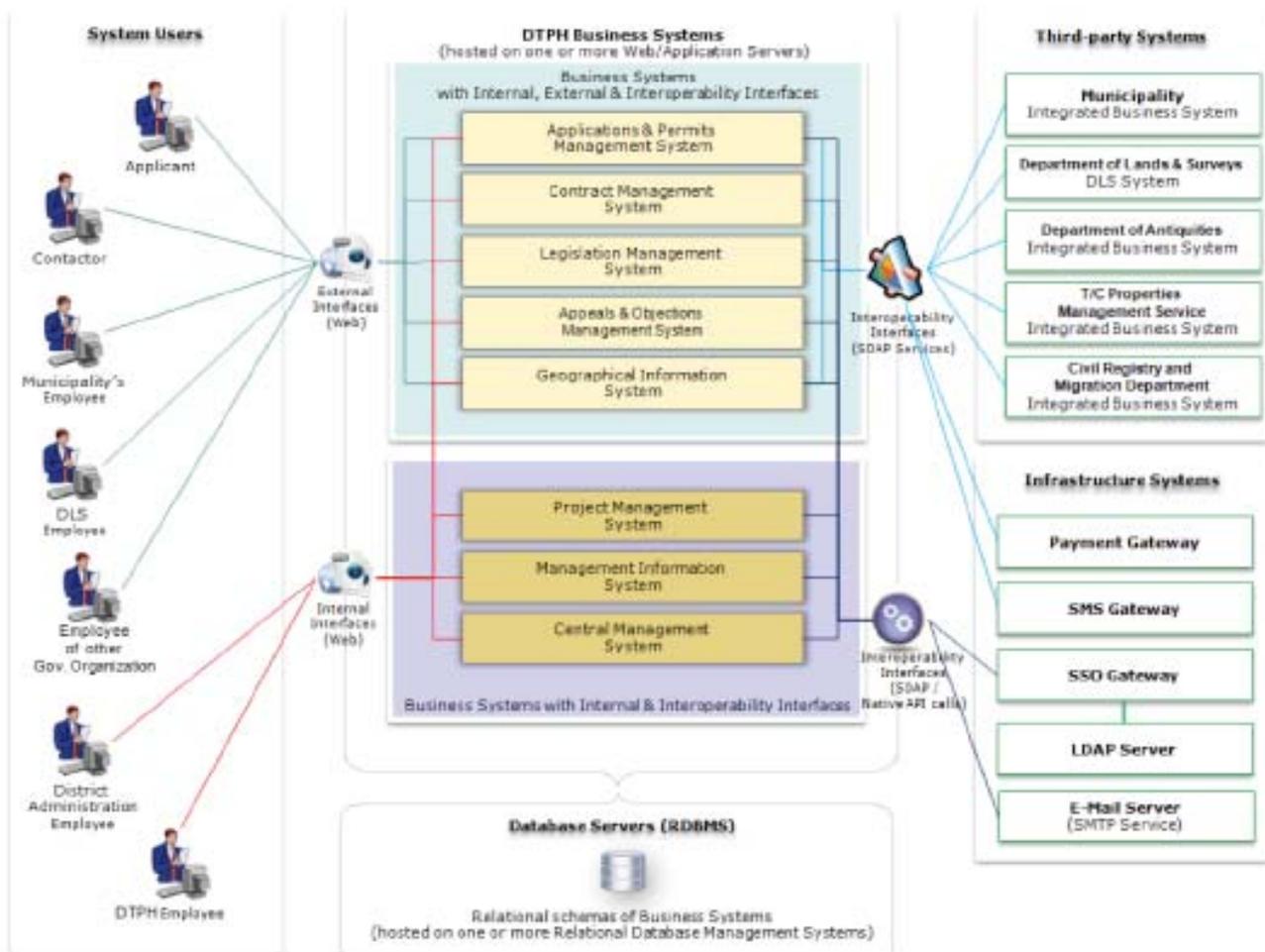
Ολοκληρωμένο
Πληροφοριακό Σύστημα
της Αρχής Ανάπτυξης Ανθρώπινου Δυναμικού

Μέσα στους επόμενους μήνες αναμένεται η έναρξη υλοποίησης του έργου που αφορά την Προμήθεια, Σχεδιασμό και Ανάπτυξη, Εγκατάσταση, Παραμετροποίηση και Συντήρηση του Ολοκληρωμένου Πληροφοριακού Συστήματος (ΟΠΣ) της Αρχής Ανάπτυξης Ανθρώπινου Δυναμικού (ΑνΑΔ).

Γενικός στόχος του έργου είναι η υλοποίηση του ΟΠΣ ΑνΑΔ σε μία και μόνο ενιαία πλατφόρμα, το οποίο θα καλύπτει πλήρως τις λειτουργικές ανάγκες και τις παρεχόμενες υπηρεσίες της ΑνΑΔ με Σύγχρονες Τεχνολογίες Πληροφορικής. Το ΟΠΣ ΑνΑΔ θα αποτελείται από Λογισμικά Συστήματα και Εφαρμογές, Βάσεις Δεδομένων και στην εφαρμογή υπηρεσιών ηλεκτρονικής διακυβέρνησης που περιλαμβάνει με την σειρά της την εφαρμογή νέων τεχνολογιών, διαμόρφωση και αυτοματοποίηση διαδικασιών όπως, Διαχείρισης Ηλεκτρονικών Εγγράφων και Εταιρικού Περιεχομένου (ECM), Σύστημα Διαχείρισης Επιχειρησιακών Πόρων (ERP), υποδομή Διαχείρισης Επιχειρηματικών Διαδικασιών (BPM) και υποδομή υπηρεσιών διαδικτύου (Web Services).

Απώτερος στόχος του έργου μέσα από την υλοποίηση του ΟΠΣ ΑνΑΔ, είναι η βελτίωση του τρόπου λειτουργίας της ΑνΑΔ, η αύξηση της αποδοτικότητας και αποτελεσματικότητας των υπηρεσιών που αυτή καλείται να παρέχει, καθώς και η εισαγωγή και αξιοποίηση σύγχρονων εργαλείων διοίκησης και πληροφορικής στην καθημερινή πρακτική. Με το έργο αυτό επιδιώκεται η ένταξη όλων των βελτιστοποιημένων διαδικασιών της ΑνΑΔ μέσα σε ένα σύγχρονο ολοκληρωμένο πληροφοριακό σύστημα που θα ελαχιστοποιήσει τις χειρόγραφες διαδικασίες, θα βελτιστοποιήσει τη λειτουργία και θα αξιοποιήσει καλύτερα τους ανθρώπινους πόρους.

Ειδικότερα, τα αναμενόμενα αποτελέσματα από την υλοποίηση του αντικειμένου του έργου είναι τα ακόλουθα:

* Βελτίωση του τρόπου λειτουργίας της ΑνΑΔ με την αύξηση της αποδοτικότητας και αποτελεσματικότητας των υπηρεσιών που αυτή καλείται να παρέχει, στη μείωση του κόστους λειτουργίας των παρεχόμενων υπηρεσιών και στη μείωση της γραφειοκρατίας.
* Κατάργηση διπλών εργασιών και ελαχιστοποίηση των μη μηχανογραφημένων διαδικασιών.
* Ικανοποίηση επιπρόσθετων αναγκών πληροφόρησης με τη διασφάλιση εξειδικευμένου συστήματος ετοιμασίας και δημιουργίας αναφορών (καταστάσεων).
* Παροχή υπηρεσιών αυτό-εξυπηρέτησης στους χρήστες του Συστήματος.
* Αυτοματοποίηση των λειτουργιών όλων των Αρχείων της ΑνΑΔ και εφαρμογή διαδικασιών ηλεκτρονικής διαχείρισης εγγράφων.
* Ελαχιστοποίηση του χρόνου αξιολόγησης αιτήσεων παρέχοντας άμεση και αυτόματη ενημέρωση στους εξωτερικούς χρήστες ανά στάδιο και σχέδιο / δράση ΑνΑΔ.
* Ελαχιστοποίηση του χρόνου διεκπεραίωσης αιτήσεων σχεδίων / δράσεων της ΑνΑΔ.
* Αυτοματοποίηση και απλοποίηση όλης της διαδικασίας και σταδίων διεκπεραίωσης αιτήσεων σε

σχέδια / δράσεις της ΑνΑΔ.

- Αυτοματοποίηση ελέγχου των καταχωρισμένων στοιχείων ανά στάδιο και συγκεντρωτικά με λειτουργικότητα άμεσης επαναφοράς είδη καταχωρισμένων στοιχείων και αιτήσεων.
- Βελτίωση των παρεχόμενων υπηρεσιών με την άμεση, διαδραστική και ασφαλή πρόσβαση και καταχώριση πληροφοριών και αιτήσεων σε όλα τα σχέδια, δράσεις και διαδικασίες της ΑνΑΔ μέσω του διαδικτύου.
- Χρήση και διασύνδεση όλων των αιτήσεων, δράσεων και διαδικασιών με την απαιτούμενη υποδομή ηλεκτρονικής διαχείρισης αρχείων, των σχετικών διαδικασιών αρχείων της ΑνΑΔ για την διανομή, καταχώριση, ανάκτηση και διεκπεραίωση όλων των εγγράφων συσχετιζόμενα με την ολοκλήρωση μίας διαδικασίας / κύκλου αίτησης για συγκεκριμένο σχέδιο / δράσης / εξωτερικού χρήστη.
- Εν ροή στατιστικά στοιχεία για την παρακολούθηση της προόδου ανά στάδιο διαδικασίας, ανά υπόθεση, ομάδα υποθέσεων, λειτουργιών, σχεδίων και δράσεων με σχετικές προειδοποιήσεις για τυχόν καθυστερήσεις καθώς και ενδείξεις για τυχόν διαμόρφωση διαδικασιών για καλύτερη παραγωγικότητα και εξυπηρέτηση των εξωτερικών

χρηστών.

- Ευέλικτη εφαρμογή και προσαρμογή διαδικασιών ανά στάδιο και ροή διαδικασιών για την άμεση λύση προβλημάτων, απεμπλοκή κωλυμάτων και συγκεντρωτισμού υποθέσεων δίδοντας και παρακολουθώντας τα αποτελέσματα των προσαρμογών εν ροή.

Το Ολοκληρωμένο Πληροφοριακό Σύστημα αναμένεται να περιλαμβάνει τα ακόλουθα υποσυστήματα:

- Σύστημα Διαχείρισης Εταιρικού Περιεχομένου και Επιχειρησιακών Διαδικασιών (Enterprise Content Management) με ενσωματωμένο υποσύστημα Διαχείρισης Επιχειρησιακών Διαδικασιών (Business Process Management) και Διαχείρισης Εγγράφων (Document Management)
- Ολοκληρωμένο σύστημα ηλεκτρονικής διαχείρισης, τεκμηρίωσης και διάχυσης του πολυδιάστατου συστήματος έγκρισης και επιχορήγησης των δράσεων / σχεδίων / προγραμμάτων ανάπτυξης ανθρωπίνου δυναμικού της ΑνΑΔ.
- Σύστημα Διαχείρισης Ανθρώπινου Δυναμικού (HRM)
- Σύστημα Οικονομικής Διαχείρισης (Accounting)
- Σύστημα Μισθοδοσίας (Payroll)
- Σύστημα Εσωτερικής και Εξωτερικής Διάχυσης

ΠΙΣΤΟΠΟΙΗΤΙΚΟ ECDL ΕΠΕΛΕΞΕ ΤΙΣ ΕΝΟΤΗΤΕΣ ΠΟΥ ΣΟΥ ΤΑΙΡΙΑΖΟΥΝ

ΝΕΑ ΤΕΧΝΟΛΟΓΙΑΣ

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TOP TechNews 2013

The worlds first Mobile Hybrid Dual Drive (SSD + HDD)

The Western Digital launched WD Black[2] is the world's first 2.5-inch dual drive that fuses a fully accessible solid-state drive with a generous capacity of 1 TB hard drive, all in a 2.5-inch form factor. The dual drive storage solution is a completely new approach in solid-state and hybrid storage market. The 2.5 inch hard drive consisting of a SSD and a conventional hard drive in a device with a single cable connection and has redefined the PC industy with the next big thing in ultra-fast performance storage with the revolutionary fusion of a fully accessible solid-state drive for your operating system and a generous capacity hard drive for personal data and large files. With a single solution you can Instantly add speed and capacity to your systems today and make your notebook or PC experience better, faster and more dynamic. Finally creative users and system integrators can have the speed of an SSD and the capacity of a hard drive. [1,2]

Παραδόσεις παραγγελιών με drones απο την Amazon Prime Air

Μοιάζει με σενάριο επιστημονικής φαντασίας, αλλά είναι πραγματικό.

Σε τηλεοπτική εκπομπή του CBS στις ΗΠΑ, μίλησε ο Jeff Bezos, CEO της Amazon για τα μελλοντικά σχέδια της εταιρείας. Η Amazon έχει ξεκινήσει ήδη έρευνες για την υλοποίηση αποστολής παραγγελειών μέσω… drones. Η νέα υπηρεσία αποστολής ονομάζεται Amazon Prime Air και υπόσχεται παράδοση σε μισή ώρα στη διεύθυνση του παραλήπτη. Για όσους δεν γνωρίζουν, τα «drones» είναι μικρού μεγέθους μη επανδρωμένα αεροσκάφη, αλλά στη συγκεκριμένη περίπτωση η Amazon θα χρησιμοποιεί «octocopers».Πρόκειται για ένα υβριδικό αεροσκάφος, κάτι ανάμεσα σε ένα μικρό αεροπλάνο και ένα ελικόπτερο με οκτώ έλικες.

Τα drones φέρνουν ειδικό καλάθι στο κάτω μέρος για να μεταφέρουν το σχετικό δέμα. Σύμφωνα με την Amazon, η υπηρεσία θα χρειαστεί ακόμη καιρό για να αναπτυχθεί πλήρως και να υλοποιηθεί, και ο Jeff Bezos προβλέπει ότι κάτι τέτοιο δεν θα καταστεί δυνατόν έως στο 2015 ή μάλλον λίγο αργότερα. Περισσότερες πληροφορίες σχετικά με την πρωτοβουλία της Αμαζον και τις ειδικές συσκευές στον πυρήνα του κατά πάσα πιθανότητα θα φθάσουν εντός των προσεχών εβδομάδων.

Η Ομοσπονδιακή Διοίκηση Αεροπορίας των ΗΠΑ ασχολείται ενεργά με τους κανόνες για μη επανδρωμένα εναέρια οχήματα και ετοιμάζει ήδη το νομικό πλαίσιο μέσα στο οποίο θα επιτρέπεται να πετάνε τα drones. [3,4,5]

Scan this QR code to watch the video from your smartphone:

Need a QR code reader?
In order to read QR codes with your mobile you will probably need to download a QR reader or QR code scanner application first.
There are several QR code scanners/readers available. A list of suitable applications is shown below:
• QR code readers for iPhone & iPad: Scan, Qrafter & ScanLife.
• QR code readers for Android: Scan, QR Droid & ScanLife.
• QR code readers for Windows Mobile: Scan, Esponce QR Reader & QR Code offline.

Intel announces Edison:
a 22nm dual-core PC the size of an SD card
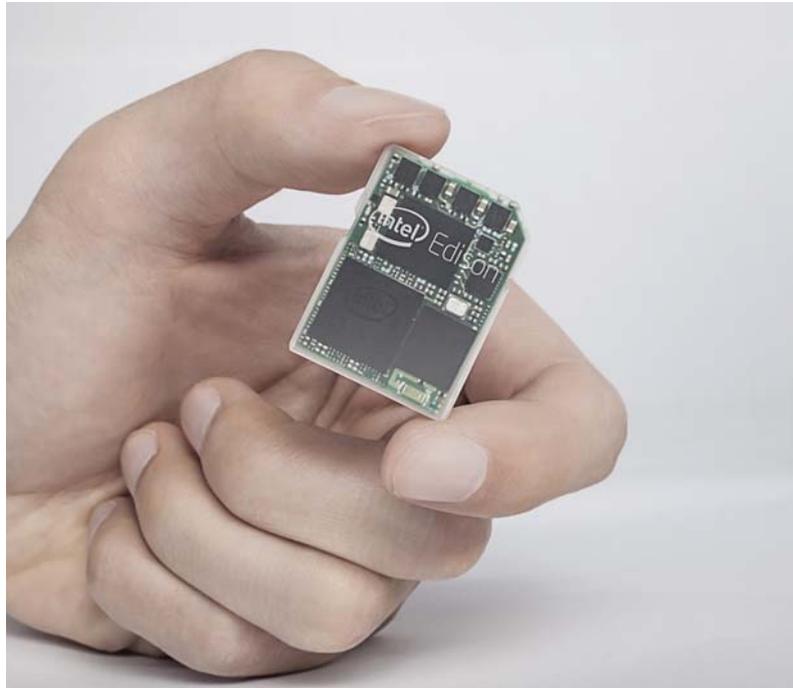
At CES 2014, Intel's CEO Brian Krzanich introduced Edison, a miniature computer based on the Quark SoC technology condensed into the form factor of an SD card. The tiny computer is built on the company's 22nm transistor technology, runs Linux and has built-in WiFi and Bluetooth modules. What's more, the tiny machine can connect to its own app store. Naturally, the device is aimed at developers, who will use it to build the next generation of wearable and connected devices. Even so, Intel is leading by example, and showed a small collection of "Nursery 2.0" products using embedded Edison chips: a toy frog that reports an infant's vitals to a parent via an LED coffee cup, for example, and a milk warmer that starts heating when another connected item hears the baby cry. [REF. 26] [Photo REF. 27]

Gaming & tech news

Technology evolves in amazingly rapid speeds. If you need any real observable proof of the speedy advancement of digital technology over the years, take a look at the gaming industry.

New graphics cards:
AMD's graphics card comeback the new R9 & R7 series

ATI Radeon R9 290X

Graphics cards are big business for AMD and Nvidia and they both have released new product ranges this year. It's been a tricky couple of years for AMD's graphics card division manly because the competition's offerings were often better and because improvements in integrated graphics have hurt demand for discrete GPUs in general. The latest offering from AMD are the R7 and R9 cards which don't only notch up the FLOPs, but also come with support for something called "Mantle" - a programming tool which unifies game development across PCs and consoles, and which promises superior visual performance so long as developers make AMD-specific versions of their games to exploit it. The new GPU's (graphics processing units) come with new AMD TrueAudio Technology which enable games to feature more realistic environmental dynamics, sound effects, and directional audio. Also with new AMD Eyefinity Technology they can supports up to 3 monitors. All the new generating cards from AMD come equipped with 2GB or up to 4GB of super-fast GDDR5 memory for the best gaming experience at the highest resolutions including 4K and enables expansive multi-display setups and provides users with the speed for smoother gaming. [6]

The Radeon R7 and R9 series and GeForce GTX 7xx series are crucial for both companies: they're within reach for many PC gamers and they're still powerful enough to function as their only graphics purchase for two or three years.

NVIDIA GTX 780Ti Series

On the other hand just days after the launch of the Radeon, Nvidia (as direct competitor to AMD) has responded rapidly with what many consider the fastest single-GPU graphics card, with the GTX 780 Ti -which loks externally identical to the company's existing high-end 700 series cards-. Nvidia has once again stole and taken the single GPU performance crown. While the card undoubtedly demands a high investment, for gamers, the GTX 780 Ti is the new king. There's no doubt that you get a lot of performance from the GTX 780Ti, but that performance comes at a price and is approximately 40 percent more expensive but only about 20 percent faster, and performance is pretty much the only thing

that separates them. Compared to the R9 290X, however, investing in the GTX 780 Ti also sees you investing in a card that's not just faster, but more efficient, cooler, quieter, better built and also its overclocking potential is fantastic too. [25]

In the end, the GTX 780 Ti is something of a dream card for gamers, as it excels in practically every way you'd want it to. Sadly, its price means that for most of us it will remain a dream but for a lucky few who want the best gaming GPU on the planet, the card which features 25% more cores than GTX 780, offers extreme performance and a quiet, cool experience. Both cards are performance accelerated, giving you the freedom to play every title at ultra-settings and max resolutions on today's highest-definition displays. If you are in the market for a new graphic cards and a serious upgrade in your system, look no further, between these two offerings and choose the one based on your needs and your budget.

Epilogue:
From the very early years of black-and-white 2D games like Pong (1972) to the first 3D game, 3D Monster Maze in 1981, and from primitive first-person shooters like Wolfenstein 3D (1992) to complex, life-like shooters like there's no doubt that the gaming industry has seen its fair share of technological evolution. [7]

Top Games
of the year 2013

'*In a year packed with so many amazing games, 2013 was an incredible year for releases. Creativity and innovation are at the core of what keeps gaming interesting and exciting year after year. The quality of games could be the difference between success and failure. Thankfully, there were a few shining examples in 2013 that proved tradition and innovation are not mutually exclusive. 2013 will no doubt go down in history as one of the best years in gaming because there was an abundance of great games released and nearly every platform was host to at least few of them that reflects the best the gaming industry has to offer. Looking for the best games to buy in? Here's a round-up of must-have games to own. [8]*

Narrowing down the hundreds of games released in a year to just 16 that form the best games of the year it wasn't a easy task but probably all gamers will be happy with the list we ended up with. So, to round out 2013's year-end wrap up of quality games, let me present the Top 16. The list includes a lot of great games to round up a quite a full year of gaming. Enjoy.'

Grand Theft Auto V

It's probably comes as no surprise that GTA 5 is top of our list of games. We've had to wait over five years for the GTA IV follow-up but in return for our patience we are given Los Santos, the biggest open world to explore by some distance. The interactivity of storylines from our three main protagonists and the introduction of heist missions also adds a whole new dimension to GTA proceedings. The game is bringing other activities to entertain yourself, the soundtrack is brilliant, and the humour is firmly in place to make this the standout out game of the year so far. Time magazine named it the best game of 2013. Arguably the last great game for the last generation of consoles, Grand Theft Auto 5 is one of the most eye-popping technical achievements of this year. Set in a sprawling approximation of Los Angeles - Los Santos, to you - GTA 5 offers players myriad quests, activities, side missions and mini-games to enjoy. Players can take part in elaborate heists, street races, story quests or even the odd round of golf at a country club. In the tradition of the best open world games, GTA 5 plonks players into a believable and beautiful world and then gives them every reason to explore it - either through the eyes of its three. Rockstar pretty much popularised the open world epic, and with GTA 5, they demonstrate their complete mastery of it. [9]

The game sold 11.21 million copies and grossed $800 million on its first day, setting many records, eventually making $1 billion within 3 days of the game's release. Currently the game hasn't been released on the PC yet -only for consoles- and most of the gamers are expecting it soon, however Rockstar will not confirm nor deny a PC version and has yet to officially announce a release date for the PC.

Assassin's Creed 4: Black Flag

Assassin's Creed 4 is an action and adventure game with open-world elements. The action shifts nicely and the players should expect tons of quests, targets and buildings to climb. Players can explore the seven seas, engaging in naval battles, hunting sharks and even diving to the bottom of the ocean in search of treasure. Utterly essential on any platform you happen to own.

DmC: Devil May Cry
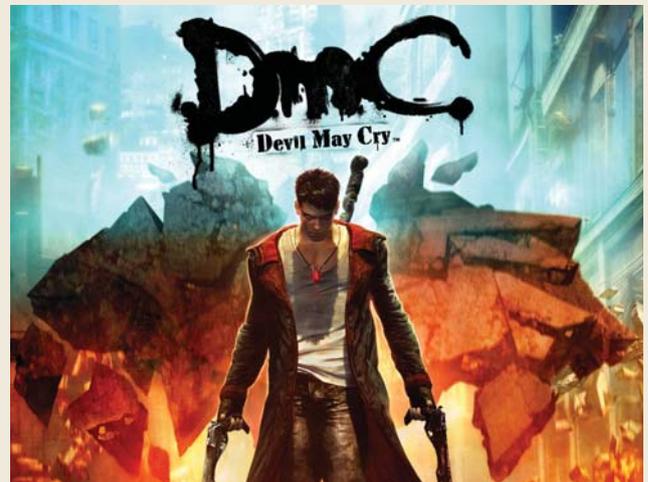
Taking a more 'western' approach to the hack and slash-em-up, Devil May Cry is an action-adventure hack and slash video game that certainly pays off. Take your pick of pistols, shotguns and gauntlets but swords remain Dante's most deadly choice of weaponry. The roughly 10 hours of gameplay enjoyable for newcomers and fans of the original DmC. The game certainly made an impression amongst gamers and the series' fabled combat mechanics are good making it received many positive reviews by gaming websites who praised the gameplay.

Grand Theft Auto V

Slated for release in 2012, Bioshock Infinite finally made it out in 2013 and the sequel was well worth the wait. Set in the 1900s and moving up to the floating sky city of Columbia, the story revolves around a private eye's attempts to retrieve a girl with mysterious powers. The period style environment is magnificent, the combat enjoyable and the computer co-star brilliantly executed. On the surface, BioShock Infinite is the story of a hired gun out to save a kidnapped beauty in a floating city. It's plot delves into quantam physics, alternate realities and it even points an accusing finger at fans of shooters and questions the legitimacy of their form of entertainment. Between its high-minded plotting and its gorgeously presented world, this is arguably one of the best games made for this generation of consoles [9] Just like the original, Bioshock Infinite is truly a special first person shooter.

FIFA 14

FIFA 14 is a sports football simulation video game and has tried to mould itself much closer into a more modern representation of the game putting the emphasis on simulation more than it has ever before. The tweaks and improved game engine mechanics feel more substantial and noticeable than they have done in the last few FIFA games and while it should make it a tougher game to master, it should still offer that same satisfying football feeling. The new engine makes FIFA 14 makes the on-pitch action look more realistic than ever.

Call of Duty: Ghosts

Set 10 years after the collapse of the USA as a superpower, Call of Duty Ghosts follows the fortunes of several spec ops soldiers as they pick their way through the wreckage of the West. The first-person shooter video game is the tenth primary installment in the Call of Duty series and comes packaged with a frenetic multiplayer and a decent co-op mode. This instalment in the Call of Duty series features a fresh dynamic mode where players are on the side of a crippled nation fighting not for freedom, or liberty, but simply to survive. As what's left of the nation's Special Operations forces, a mysterious group known only as "Ghosts" leads the fight back against a newly emerged, technologically-superior global power.

Battlefield 4

Battlefield 4 is a first-person shooter video game and a military blockbuster that aims for unrivaled destruction. Fueled by Frostbite 3, Battlefield 4 allows you to demolish the buildings shielding your enemy. Battlefield grants you the freedom to do more and be more while playing to your strengths and carving your own path to victory. Beyond its hallmark multiplayer, Battlefield 4 features an intense, dramatic character-driven campaign that starts with the evacuation of American VIPs from Shanghai and follows your squad's struggle to find its way home. The landscape changes in real-time with interactive environments that react to your every move. Dominate land, air and sea with all-new, intense water-based vehicular combat. The game's online mode is a thing of beauty. Up to 64 players can wage pitched battles across a series of maps and match types, using a vast array of weapons, equipment and vehicles. To top it all off, the game's destructible environments include massive set-pieces - such as dropping a skyscraper into the middle of a battlefield - which change both the map layout and the environmental dynamics. The new graphics engine makes all the action look utterly eye-watering. Arguably one the best shooters from this or any year.

Batman
Arkham Origins
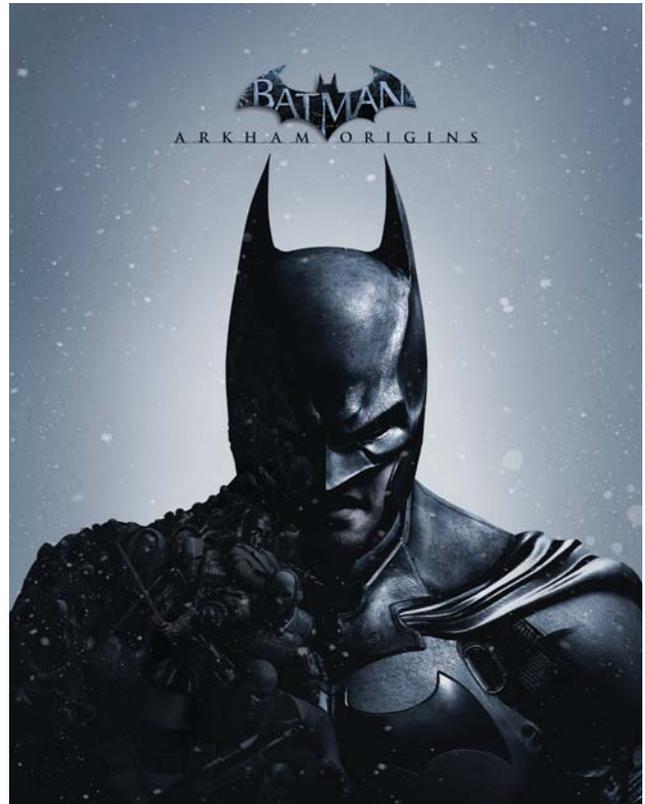
The new instalment in the batman series is an action-adventure video game developed by Warner Bros Built using the in-game engine from Batman: Arkham City, Arkham Origins keeps most of the same gameplay as its predecessor, but bolts a brand new story and environment on. In Origins, the villain Black Mask has placed a $50m bounty on the Dark Knight's head, attracting every bounty hunter and assassin in Gotham to hunt Batman through the streets. Action is still the same satisfying cocktail of brutal combat, puzzle solving and terrorising bad guys in Predator rooms.

Tomb Raider
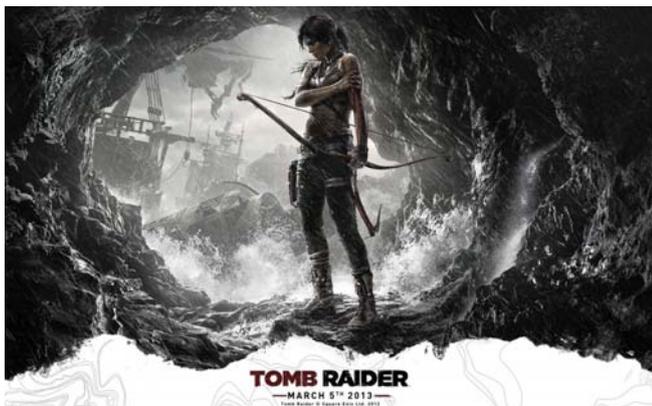
Tomb Raider is an exhilarating action adventure that serves as a terrific origin story for the iconic Lara Croft. The game is a reboot that emphasises the reconstructed origins of the culturally influential lead character Lara Croft. The campaign is excellent and there's an enjoyable but unremarkable competitive multiplayer component. There are four modes, all of which are pretty typical: a team deathmatch and a free for all, as well as two modes in which teams score points by completing basic objectives. The single-player campaign is the main attraction, and it is excellent. It doesn't try to rewrite the book on third-person action adventure games. But with its excellent controls, engaging heroine, thrilling combat, and fascinating setting, it doesn't need to. Lara may be covering some previously charted territory here, but Tomb Raider is so well-crafted, you won't mind at all. [10] Tomb Raider puts a young Lara Croft against a gang of cult-like madmen on an island in the South China sea. The game borrows a couple of elements from the Uncharted series in terms of action-packed set pieces and cover-based shooter action. The game is filled with of nail-shredding tension and grisly violence. [14] Tomb Raider sold one million copies within 48 hours of its release, and has sold more than 4 million copies overall.

Diablo III

One this year's most addictive games was actually released on PC last year. Diablo III is an action role-playing video game developed and published by Blizzard Entertainment. Fortunately for console owners, Blizzard has done a fantastic job in porting over its superb dungeon crawler for the PS3 and the Xbox 360. Controls are tight and intuitive, menus are easy to navigate and co-op play is seamless. [9] Diablo III set a new record for fastest-selling PC game by selling over 3.5 million copies in the first 24 hours of its release and was the best selling PC game of 2012, selling more than 12 million copies during the year. It received generally positive reviews from critics, although it requires an internet connection at all times.

Far Cry 3: Blood Dragon

Cry 3: Blood Dragon is a first-person shooter video game developed and published by Ubisoft Montreal. It is a stand-alone expansion to the 2012 video game Far Cry 3. The game, a satire of 1980s action films, takes place on a retro-futuristic open world island crawling with evil, with players assuming the action role of eye-patched cyborg protagonist Sergeant Rex Power Colt. The game was released on May 2013 and received generally positive reviews from professional critics [11] The game is arguably the biggest curveball tossed out by the industry all year, this download title takes the template of Far Cry 3 and throws the trappings of an 80s action sci fi flick over the top of it. The plot is ridiculous, the writing is funny and the voice acting is top notch. One of the best - and most fun - shooters released all year. [9]

Crysis 3

EA's super-powered FPS is set in a New York that's been both wrecked and overgrown by jungle foliage, due to the city being encased in a biodome. The good news is, there's plenty of beasties and enemies to kill and a whole of weapons and powers to use to do this. [12] Crysis 3 is a multi-platform video game developed by the German game developer Crytek and is published by Electronic Arts for Microsoft Windows, PlayStation 3, and Xbox 360. It is the third main installment of the Crysis series, a sequel to the 2011 video game Crysis 2, and runs on the CryEngine 3 game engine. It was one of the most anticipated upcoming games of 2013. Crysis 3 has won PC Gamer Most Valuable Game, Game Informer Best of Show and Electric Playground Best of E3 awards. [13]

Tom Clancy's Splinter Cell: Blacklist

Tom Clancy's Splinter Cell: Blacklist is an action-adventure stealth game published by Ubisoft. It is the sixth installment of Tom Clancy's Splinter Cell series and is the direct sequel to Splinter Cell: Conviction. [15] Sam Fisher returns in this new tale of international espionage in which the gravel-throated operative is tasked with tracking down a list of terrorists who are targeting the United States. Previous games in the series put a premium on stealthily sneaking about in the dark, but Blacklist juggles this with burst of high-octane action. Blacklist allows players to use quick bursts of fluid run-and-gun action to compliment Sam's preternatural agility, and once again, Sam doesn't shy away from knocking confessions out of terrorist ne'er-do-wells. [9] It's reported that the game sold over 2 million copies world wide.

Metro: Last Light

Metro: Last Light (formerly Metro 2034) is a single-player first-person shooter and horror video game. The game is set in a post-apocalyptic world and features a mixture of action-oriented and stealth gameplay. The game exists in the universe of the novel Metro 2033 and its sequels, written by Russian author, Dmitry Glukhovsky, but does not follow any direct storylines from the books. Previously announced as Metro 2034, the game is a sequel to the video game Metro 2033.[16] Last Light is the second instalment of the Metro series - set in a future where nuclear war has driven the population of Moscow into the underground Metro tunnels, where they're confronted with mutated horrors in the dark. We'd recommend it alone for the its decent storytelling which is admirably unique dystopian world and its choking, gritty atmosphere. Like all great post-apocalyptic fictions, it's not the monsters that the player need concern themselves with... it's their fellow humans. [9]

Payday 2

Payday 2 is a cooperative first-person shooter video game developed by Overkill Software. It is the sequel to Payday: The Heist. Payday 2 involves the player and their team, which consists of either friends or randomly assigned players, performing bank heists and robberies. Gameplay has been heavily improved and expanded since its predecessor, with a number of new abilities. [17] Conceptually Payday 2 comes across like the illegitimate child of Left 4 Dead and Heat. In it, four players - controlling four masked criminals - are given a series of outlets to take down without incurring the wrath of the cops. Jobs vary from smashing up a department store to robbing a bank to ripping off an art gallery. Teamwork is paramount here, if you don't work together, you won't succeed. The learning curve is pretty steep - if you haven't been playing since launch you'll get booted from a lot of games - and the single-player mode is rubbish. But in four-player co-op, when everything comes together, Payday 2 shines brighter than most other titles on release this year. [9]

Saints Row 4

Saints Row IV is a comedic action-adventure video game, developed by Deep Silver Volition and published by Deep Silver. It was released for Microsoft Windows, PlayStation 3 and Xbox 360. It is the fourth installment in the Saints Row series, after the release of Saints Row: The Third in 2011. As in previous titles in the series, the player controls the leader of the Third Street Saints, a street gang, who has now become the president of the United States. The game takes place five years after the events of its predecessor, returning to the fictional city of Steelport, focusing on the Saints fighting an alien invasion as well as simulations of the gangs and enemies from their past. [18] There are a ton of reasons we'd pick Saints Row 4 as one of our favourite games of this year. It's utterly and completely bonkers. You get to have superpowers and weapons. The soundtrack is awesome. But mostly, we love Saints Row because it's the closest we've been to feeling like we were back in a childhood gang. [9]

From big hitters like Battlefield 4 to FIFA 14 there was something for everyone in our round up of the best games of 2013. It was hard to narrow down this year's offerings to just 16 top games because I choose to opt-out and exclude from the list most of the exclusive titles for consoles in order to ended up with some of the best-loved games.

No matter which device, console or pc you are using for your gaming needs you can learn and entertain yourself at the same time thru games and mostly have fun at it. We encourage gamers and technology lovers to bond with a purpose, immerse in their power to discuss and share with each other, discover and create their own playground around thrilling challenges, purpose and accomplishment.

New anticipated
releases for 2014

It's has been exciting ride for all of us gamers, both casual or hardcore types. Most of us have a wishlist for how games will turn out in the future. That said, it is still delightful to know that the gaming industry is heading towards uncharted territory, always exploring and pushing the limit. As for me, I'm one who would rather take a backseat and take pleasure in seeing how future games will unfold themselves! [7]

The new year brings us a pair of new video game consoles to play and those new consoles [Sony's PlayStation 4 and Microsoft's Xbox One] mean new video game releases in 2014. This year looks promising for new video games. All the games that didn't make it on the last generation will be coming out in 2014, which means plenty of new video game releases scattered throughout the year.

Destiny

First-person shooters can be big-budget affairs with astoundingly high production values, and no one does it quite like Bungie, the studio behind the original Halo games. Destiny is an upcoming action role-playing first-person shooter video game in a "mythic science fiction" open world setting. Destiny is an open-world shooter that combines elements from role-playing games and first-person shooters, similar to games like Borderlands. And typical of Bungie, the game appears to be dripping with interesting gameplay and story elements. Players will create a character from one of three classes and set out to defend their homeland from hostile alien forces in a post-apocalyptic future. The new video game will feature live events that aren't necessarily planned by the programmers, bringing a fresh element to the gameplay and marking a significant advancement in gaming AI. Destiny releases onto Xbox and PlayStation consoles in September. The creator of the game already demoed a live gameplay footage of Destiny at Sony's E3 2013 conference and is already being looked at as one of the most anticipated new video game releases in 2014. [19]

Watch Dogs

Watch Dogs is an upcoming 2014 open world action-adventure video game developed and published by Ubisoft. It is due for release in the second quarter of 2014 for Microsoft Windows, and the PlayStation 3, PlayStation 4, Xbox 360, Xbox One and Wii U consoles. The game is set within a fictionalized version of Chicago, Illinois. The single-player story is told through Aiden Pearce, a highly skilled hacker, who can hack into various electronic systems, either to obtain and control information or to destroy such devices completely at specific times. Watch Dogs looks equal parts dark and slick, and should be an exciting cyberpunk adventure for gamers. It should also be a good way to distract yourself from wondering whether the government is spying on you.

Titanfall

Arts as an exclusive for Microsoft Windows, Xbox 360, and Xbox One. The game is scheduled for release on March 11, 2014. In Titanfall, players fight in online multiplayer-only matches set on a war-torn planet asmech-style Titans and their pilots. Its action is fast-paced, including abilities to run on walls and hijack mechs, and extended periods between player deaths. Respawn describes the game as bringing "scale, verticality, and story" to first-person shooter multiplayer gaming, incorporating elements traditionally used in single-player campaigns. The game uses Microsoft's cloud computing services to offload non-player activity to servers and optimize the home computer for graphical performance. The game won over 60 awards at its E3 2013 reveal, including a record-breaking six E3 Critics Awards, and Best of Show from several media outlets. It also won official awards at Gamescom and the Tokyo Game Show. Many reviewers predicted Titanfall to be the next step for the first-person shooter genre. [22]

Titanfall is the most eagerly anticipated upcoming first-person shooter video of 2014. The game is developed by Respawn Entertainment and published by Electronic

Star Citizen

Star Citizen is an upcoming space trading and combat simulator video game for Microsoft Windows. Star Citizen will consist of two main elements: a persistent world online game mixing elements of first person space combat and interstellar trade (known as Star Citizen) and a branching single-player and drop-in co-operative multiplayer campaign, together with customizable private server components. [20] A strong focus will be placed on player interaction, with player behaviour influencing and being influenced by a dynamic economy system. Star Citizen is set in a 30th-century Milky Way centered around the fictional UEE (United Empire of Earth), an analogue of the late Roman Empire. Star Citizen has already broken all records for crowdfunding (in donations) totals and the company's CEO has confirmed that the company has now raised US$35million. The game eventually will be a highly detailed, vast space trading game with combat and socialising elements. It is being developed in a modular fashion with the first portion of the game already completed which consists of a hangar module that allows the allows the player to store and view their ships, with future updates adding the ability to upgrade and modify them. [21]

Final Fantasy XV

Final Fantasy XV is an upcoming action role-playing video game being developed and published by Square Enix for thePlayStation 4 and Xbox One. The fifteenth installment in the main Final Fantasy series, it is a heavy departure from previous games, providing a darker and more realistic atmosphere that focuses on human emotions and believable characters. The game features expansive environments and a seamless and customizable battle system, which gives players great freedom regarding their preferred play method. Final Fantasy XV is the story of a young king sworn to defend the last crystal in the world from the "hectic order" outside of his kingdom. It's a fight between ancient and modern techonology, and the struggle of one king to protect the old ways. [23]

Wolfenstein: The New Order

Wolfenstein: The New Order is an upcoming first-person shooter video game in development by MachineGames to be published by Bethesda Softworks for Microsoft Windows, PlayStation 3, PlayStation 4, Xbox 360 and Xbox One. The New Order is the ninth installment in the Wolfenstein series and the first since 1992 developed without the Id Software label. The game is set for launch during 2014.[24]

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Νέα
ΤΕΧΝΟΛΟΓΙΑΣ
στην Κύπρο

CyprusGamer
Το πρώτο Κυπριακο gaming website!
All about gaming in Cyprus

The cyprusgamer.com is the result of the merge of two major online gaming Cypriot communities existed so far as Gamers-CY and CyprusGamingNetwork. The aim of this new community is to bring Cypriots gamers closer, offering an online " home " for them. The efforts being made by the members of CG is to provide continuous information on what may interest one gamer, from hardware and software to computers and consoles, competitions and other events in Cyprus. Cyprus gamer provides Teamspeak3 server that is set for all members of the community, participation in competitions for several games with scoreboards (ladders). Managers of CG promise a constantly upgraded community with a view to benefit the Cypriot gamer.

There are many gaming cafes and gaming competitions happening in different cities on the island and cyprusgamer has to be there to pass this onto the gamers and help grow the gaming community in Cyprus. Cyprusgamer.com was formed by stavros paphitis (tzaa) stefanos demetriou (mougias) and stefanos loizides (necro). Cyprusgamer was formed 2 years ago after cygaming. net and gamers-cy merged. Its a non profit group looking into bringing cypriot gamers together. That being pc gamers, console gamers, handheld whatever ect in order to bring news about gaming to cypriot gamers, about what is happening internationally and locally. [7]

Cyprus gamer offers gaming and voice servers free to all people in Cyprus and abroad.

Some of them are: Call of Duty 2 at IP: 82.102.64.20:28900, Call of Duty 4 at IP: 82.102.64.96:28960

Battlefield 3 Server, CounterStrike v1.6 Server, CounterStrike Global Offensive at IP: 194.42.142.169:27017 Players can add these servers on their games and start playing with other players around Cyprus and have fun. The team also announced that more servers will be added soon on their website. For voice communications among Cypriot gamers there is a local VoIP server that allows computer users to speak on a chat channel with fellow computer users, much like a telephone conference call. All is needed is a client called called TeamSpeak. Users can use the TeamSpeak client software to connect to a TeamSpeak server of their choice, from there they can join chat channels and discuss things. The target audience for TeamSpeak is gamers, who can use the software to communicate with other players on the same team of a multiplayer game. Communicating by voice gives a competitive advantage by allowing players to keep their hands on the controls. Teamspeak is the preferable choice for online gamers because it offers crystal clear, cross-platform voice communication, mobile device support (ios, android), improved voice quality

and latency, and in-game overlay. To join the Cypriot Teamspeak 3 Server and it's channels just download the Teamspeak client and connect to IP: 82.102.64.20

If you are a pc (or console) gamer and want to be a part of this online community and stay updated with current and upcoming news and game announcements there a lots of specific gaming Cypriot Groups on Facebook for discussions, general topics and help. You can find more about CyprusGamer at www.cyprusgamer.com or at their facebook Group: www.facebook.com/groups/cyprusgamer/

No matter how old are you, if you really care about video games, go ahead check them out and join (the clans).

Your new PC needs these 15 free programs.
New hardware needs new software

If you got a new computer, laptop or a tablet during holidays then you probably need software for it. We gather the top 15 free software utilities to accommodate your needs.

The Essential free software you can't afford to miss. Free doesn't have to mean cheesy, especially when it comes to freeware. A developer's passion project can become something you can't imagine being without, and the fact that you don't have to lay out any cash to acquire them is a major bonus.[5] A new PC is a fresh opportunity and a collection of components that, with the right software installed, could accomplish anything from balancing your household budget to helping to cure cancer. Loading programs on your PC is an intensely personal task. Even still, some programs are so helpful, so handy, so useful across the board that we heartily recommend them to everybody.[1]

These are the programs you want to install on a new PC first.

1. **A browser:** Before you roll up your sleeves and start slinging software around, make sure to snag your Web browser of choice. Firefox and IE 11 are both tremendous options in their own right, but our money's on Google's Chrome, which won browser of the year award. One good think about web - browsers is that they're all free!

2. **Ninite:** Ninite makes loading up a new computer a breeze. Simply head to the Ninite website, select which programs you'd like to install on your PC—it offers dozens of options, including many of the programs named here—and click Get Installer to receive a single, custom.exe file containing the installers for those programs. Run the executable, and Ninite installs all of them in turn. No muss, no fuss, no hassle. It's wonderful.

3. **A productivity suite:** PCs excel at helping you Get Things Done—but few of them ship with a productivity suite installed. Legions of people swear by Microsoft's legendary Office, but you don't have to drop big money on MS Office, there are Free alternatives like *OpenOffice* and *LibreOffice*, being the flagship free-and-open-source options. Even if you don't plan to use a productivity suite regularly, it's smart to have basic editing capabilities available on your computer.

Security

4. **AntiVirus:** Assuming that you plan to connect your PC to the Internet you'll need to have antimalware software installed. Windows 8 ships with Windows Defender activated by default and that's a lot better than nothing, but Windows Defender isn't as effective at fighting off the viruses as third-party options are. AVG AntiVirus Free does a great job of blocking and eradicating malware, and it includes extras such as a secure shredder, Do Not Track protection for your browser, and the ability to schedule automated scans. If you are in a company or if have lots of computer in your house and want a better protection against online threats - attacks and fastest and most effective proactive antivirus and antispyware protection, ESET

Smart Security / ESET NOD32 Antivirus is the solution for you is. The program is free for 1 month but after trial expires you have to purchase it. Free is another top no-cost antimalware option, but ESET is the program I use to keep my computer safe and secure.

Utilities

5. **Info and testing software:** The right software can put your PC through the paces and make sure everything is running as it should be. With the following programs you can find various information about your pc, evaluate it's performance, identify potential bottlenecks and help you choose system upgrades.

- CPU-Z: a freeware that gathers information on some of the main devices of your system

- HWMonitor: HWMonitor is a hardware monitoring program that reads PC systems main health sensors voltages, temperatures, fans speed. The program handles the most common sensor chips and can read modern CPUs on-die core thermal sensors, as well has hard drives temperature via S.M.A.R.T, and video card GPU temperature.

- GPU-Z: GPU-Z is a lightweight system utility designed to provide vital information about your video card and graphics processor

- MSI Afterburner: Afterburner is an overclocking and recording tool developed around the Rivatuner server. Afterburner enables graphics card users to boost performance and to monitor all kinds of critical information. It also provides important tweaking capabilities for your video adapter and It includes the ability to adjust the core, shader and memory clock levels.

- CrystalDiskInfo: CrystalDiskInfo is a HDD/SSD utility which provides General Information, supports S.M.A.R.T and monitors the health status and temperature of the hard disks on your system.

- CrystalDiskMark: CrystalDiskMark is a disk benchmark

software. It measures sequential reads/writes speed and random reads/writes speed for your hards disks or solid state drives.

6. **A Start-menu replacement (Windows 8 only):** If you got a new Windows 8 computer and miss the classic Windows feel don't worry, you'll need a Start-menu replacement. You can check the Classic Shell (free) and Stardock's Start8 ($5) that offer Start-menu replacement capabilities.

7. **FlashGet:** Want faster downloads and easier management of downloaded files? Then you need FlashGet. If you've ever waited forever for your files to download from a slow connection, or been cut off mid-way through a download - or just can't keep track of your ever-growing downloads - FlashGet is for you. FlashGet can split downloaded files into sections, downloading each section simultaneously for an increase in downloading speed. FlashGet is a freeware download manager for Microsoft Windows and has powerful and easy-to-use management features, helps you take control of your downloads like never before. [2]

8. **Paint.net:** If you're a graphics professional or you need a good image editing software and you can't afford Photoshop, try Paint.net. This image editor may not have all the bells and whistles of Photoshop, but it packs everything that most people need (even layer-based editing), impressive capabilities and best of all is free.

9. **PDF reader:** Invented by Adobe Systems and perfected over 20 years, Portable Document Format (PDF) is an open standard for electronic document exchange. Adobe Reader software is the free global standard for reliably viewing, printing, and commenting on PDF documents. It's the only PDF file viewer that can open and interact with all types of PDF content, including forms and multimedia. Adobe Reader is the go-to PDF reader, but if you need only basic functionality, go with Sumatra PDF or Foxit Reader instead. Sumatra lacks the fancy extras found in many full-featured PDF readers, but when it comes to straight-up reading Portable Document Format files, Sumatra PDF is blazing-fast and completely accurate. Another great utility for PDF's is CutePDF. It transforms a document or website or image or just about anything else into a PDF. CutePDF is a freeware utility that installs as a printer driver and lets you

transform things into PDFs via the standard File > Print interface. It's an incredibly convenient feature to have available.

Digital entertainment

10. **Music Players:** Everyone has a favorite desktop music player. For some of us, it's the one that just plays our music fast, with no fuss or hassle. For others it's a tool that organizes your playlists, syncs with your smartphone, makes your music collection easy to dig through, and looks good while doing it. [3] Sometimes, blasting tunes is the only thing that makes slogging through a spreadsheet or a stuffed inbox even remotely tolerable. The exact music client you'll want will depend on whether you've already bought into a service, naturally. For music listeners I recommend two programs: iTunes and Spotify. iTunes gives you access to a vast universe of premium music downloads and keeping your iPhone's music library synced with your PC. Spotify, meanwhile, is an all-you-can-eat streaming service with millions of top-tier tunes available, all for free. Alternative you can try MediaMonkey (jukebox and library organizer), foobar2000 (customizable, and tweakable music and audio player) and MusicBee (simple, powerful and fast music managing application).

11. **Media Players:** Windows 8 has one other prickly problem: Unlike Windows 7, it's incapable of playing DVDs out of the box. Your PC might have a DVD-playing program installed, but if not, the simply wonderful VLC media player can play your movies, music, for free. If you want a simple playback pack for Windows with the goal of supporting the majority of video formats in use today try Combined Community Codec Pack (CCCP) It can even play subtitles and many different video formats.

12. **Gaming:** Speaking of games, Valve's *Steam* games distribution system is the close-to-ultimate service for acquiring and playing games on the PC, Mac, and Linux platforms. Steam is also available in mobile versions so you can stay in touch with your game-playing friends using Android and iOS smartphones and tablets. If you play EA games, such as SimCity, or anything in the Battlefield series, you'll also want to download and install EA's *Origin*. Both Origin and Steam are free to use, and both have free as well as

pay-for games in their libraries. [5] Another great alternative for gaming and PC software is the Intel AppUp Center. The Intel AppUp center is a digital storefront for existing and new PC software, apps, content and entertainment and lets you browse, purchase and download thousands of games, productivity tools and other PC apps.

Life on the Web

13. **Cloud storage apps:** Just a few short years ago, cloud storage services that synced files and folders across multiple PCs and mobile devices were just a dream, but thanks to the rapid rise of entities like *Dropbox*, *Amazon Cloud Drive* and *Google Drive*, cloud storage and syncing services are nearly ubiquitous today, acting as hard drives in the sky that help you do all kinds of things, no matter where you are. [4] In today's multi-device world, cloud syncing and storage services are practically a must-have, as they allow you to pick up where you left off no matter which PC, phone, or tablet you're working on. *Microsoft's SkyDrive* is thoroughly intertwined with Windows 8.1, but if you're using Windows 8, 7, Vista, or XP, be sure to grab the desktop app for your cloud service of choice to ensure that your files travel with you. [1]

14. **Voip Communications:** Programs like *Viber*, *Teamspeak* or *Skype* attempt to be a phone replacement by allowing friends to contact one another and communicate over the app, even if friends aren't using it. Viber may be treading into Skype's territory, but it doesn't have the infrastructure to compete. With Microsoft pushing Skype into many products, its dominance will continue. [6] Needless to say more about Skype, the a voice-over-IP service and instant messaging client. The name was derived from "sky" and "peer. Skype it's free and works on many devices, allowing easy calls.

15. **TeamViewer:** With TeamViewer you can remote control any computer or Mac over the internet within seconds or use it for online meetings. While the main focus of the application is remote control of computers, collaboration and presentation features are included. The program offers remote support, remote access, remote control, desktop sharing, online meetings, web conferencing and

file transfer between computers. TeamViewer it's a great tool, fast to setup and deploy, easy to manage and top of all free.

Some of the best things in a life are indeed free, but they're not always obvious. Beyond the free tools and other must-have programs to install on a new PC lies a whole universe of lesser known, yet no less stellar software that's just begging for a spot on your hard drive. If you're not burned out on beautiful software just yet, you can find tons of interesting PC programs out there just begging for your attention.

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Reinn Comp

About

About

💼 Teacher at **Reinn**
September 2012 to present

🎓 Studied Computer Science at **University of Leeds**

🏠 Lives in **Lefkosa, Nicosia, Cyprus**

📍 From **25, Charalampou Pettemeride Aglantzia**

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March 21
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Αρχίσαμε , συνεχίσαμε και θα συνεχίσουμε να έχουμε στόχο μας την δική σας επιτυχία! Συγχαρητήρια σε όλους τους μαθητές που παρακάθισαν εξέταση τη **Πέμπτη 19/12/2013!**
ΕΝΑ ΜΕΓΑΛΟ ΜΠΡΑΒΟ ΣΤΑ ΜΙΚΡΑ ΜΑΣ ΠΟΥ ΠΕΤΥΧΑΝ ΣΤΗΝ ECDL eKIDS ΕΞΕΤΑΣΗ! ΜΠΡΑΒΟ ΣΑΣ!!

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Για μαθητές Δημοτικού

02 ECDL Standard
Για μαθητές Δημοτικού, Γυμνασίου, Λυκείου & Ενήλικες

03 Visual Basic
Για μαθητές Γυμνασίου & Λυκείου

04 Pascal
Για μαθητές Γ' Λυκείου

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THINK DIFFERENT: ΚΑΙΝΟΤΟΜΙΑ ΚΑΙ ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΤΗΤΑ

Σταυριάνα Α. Κοφτερός, @Stavriana_k, www.about.me/stavriana

Το DeepMind της επιχειρηματικότητας
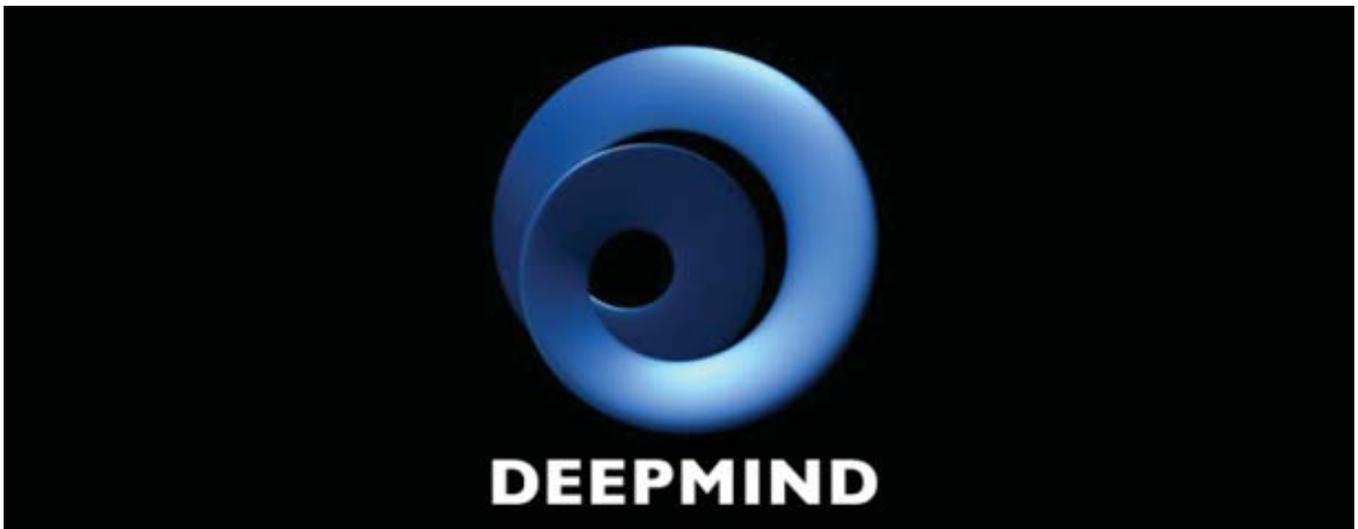
Τον τελευταίο καιρό στο παγκόσμιο τύπο αλλά και στα εγχώρια μέσα έχει κάνει αίσθηση η εξαγορά της **DeepMind Technologies από την Google** για το ποσό των $757 εκ. Ποσό που ζαλίζει. Και αισθανόμαστε όλοι περήφανοι γιατί ο ιδρυτής της εταιρείας, η οποία σημειωτέων ακόμη να βγάλει τελικό προϊόν, έχει Κυπριακές ρίζες. Ο Demis όπως αποκαλεί ο ίδιος τον εαυτό του στον προσωπικό του ιστότοπο, είναι δικό μας παιδί.

Ως εδώ καλά. Δικαίως αισθανόμαστε περήφανοι και νιώθουμε την ανάγκη να το εκφράσουμε. Και εγώ σε αυτούς. Ας μην παραβλέπουμε όμως το πιο σημαντικό παράγοντα για να μη χάσουμε την ουσία. Εξηγούμε.

Ο κος Hassabis, έχει μεν Κυπριακές ρίζες - ναι τρέχει Κύπρος στο DNA του - αλλά δε μεγάλωσε στην Κύπρο. Δεν ξεκίνησε την εταιρεία του στην Κύπρο και δεν προσπάθησε να προσεγγίσει κανένα Ίδρυμα Προώθησης Έρευνας να του χρηματοδοτήσει την έρευνα του για τον φάει η γραφειοκρατία και οι καθυστερήσεις στις πληρωμές. Δε προσέγγισε κανένα Υπουργείο, δεν αναζήτησε κανένα εκκολαπτήριο επιχειρήσεων στη Κύπρο για να του πουν, αγαπητέ μου, δεν υπάρχει πρόγραμμα να σε στηρίξουμε, το περιμένουμε από το 2008 αλλά ακόμα…. Δεν έκανε τίποτα από όλα αυτά.

Ο κος DeepMind ξεκίνησε την εταιρεία του στη χώρα που μεγάλωσε, την Αγγλία. Σε μια χώρα, φάρο στην Ευρωπαϊκή Ένωση σε ότι αφορά στα της επιχειρηματικότητας. Σε μια χώρα με αναπτυγμένο οικοσύστημα που πιστεύει στις νεοφυείς επιχειρήσεις και στις δυνατότητες τους για την οικονομία. Και εδώ ακριβώς θέλω να σταθώ. Γιατί πρέπει από το κάθε τι που

συμβαίνει στο κόσμο να παίρνουμε τα μηνύματα και να προχωράμε σε πράξεις. Επιτέλους.

Το οικοσύστημα επιχειρηματι-κότητας, ή αν θέλετε το επιχειρηματικό περιβάλλον είναι με απλά λόγια το πόσο εύκολο είναι ένας νέος να ξεκινήσει καινοτόμα επιχείρηση στη Κύπρο και να βρει χρηματοδότηση για να αναπτύξει την καινοτομία του. Είναι η κουλτούρα της χώρας προς την επιχειρηματικότητα που κάνει ένα νέο ή νέα –δεν είναι φυλετικό το θέμα μας -να τολμάει να σκεφτεί τη δική του επιχείρηση και την πολιτεία να είναι αρωγός και όχι εμπόδιο. Είναι οι γονείς, οι φίλοι, το σύστημα όλο να είναι ενθαρρυντικό και υποστηρικτικό σε αυτή την προσπάθεια. Είναι όταν η επένδυση κεφαλαίων σε νέες καινοτόμες εταιρείες – επένδυση υψηλού ρίσκου- είναι επιλογή. Το οικοσύστημα επιχειρηματικότητας είναι όλα αυτά. Είναι το θετικό και υποστηρικτικό περιβάλλον που θα επιτρέψει να γίνουν οι καινοτόμες εταιρείες.

Για να δούμε την πραγματικότητα κατάματα, δεν τα πάμε τόσο καλά σε αυτό το τομέα ακόμη. Έχουμε δουλειά μπροστά μας. Σαν κράτος και σαν πολίτες. Όμως είναι ξεκάθαρο το τι πρέπει να κάνουμε για να στηρίξουμε την επιχειρηματικότητα. Μακριά από γραφειοκρατικές διαδικασίες. Ας μη ξεχνάμε ότι μιλάμε για καινοτομία. Καινοτομία με τα φόντα να ανταγωνιστεί σε παγκόσμιο επίπεδο. Άρα πρέπει να κινηθούμε γρήγορα.

Οι νεοφυείς επιχειρήσεις δεν είναι νέο φρούτο. Ούτε για την Κύπρο. Γιατί, παραφράζοντας τον Steve Jobs, υπάρχουν και στη Κύπρο κάποια αρκετά τρελοί να νομίζουν ότι μπορούν να αλλάξουν τον κόσμο. Και το κάνουν. Έγινε η αρχή. Εταιρείες απόφοιτες του προγράμματος των εκκολαπτηρίων, ομάδες που τόλμησαν να συμμετάσχουν σε ανταγωνιστικές εκδηλώσεις επιχειρηματικότητας και καταξιώθηκαν για να ανοίξουν τα φτερά τους στην Ευρώπη. Ομάδες που έγιναν νεοφυείς επιχειρήσεις που έχουν τα φόντα να πάνε πολύ μακριά. Τσαμπουκαλεμένοι νέοι με όραμα να φτιάξουν cool προϊόντα με αγορά τους τον κόσμο όλο. Ας τους βοηθήσουμε. Ας κάνουμε ότι περνά από το χέρι μας, είτε νομοθετικά είτε διαδικαστικά, με προγράμματα χρηματοδότησης, με όρεξη, με το είναι μας όλο για να τους στηρίξουμε να κάνουν το όραμα τους πραγματικότητα. Γιατί μαζί με το δικό τους όραμα θα πραγματοποιήσουν και το δικό μας. Το όραμα για την Κύπρο του αύριο. Την Κύπρο της ανάπτυξης. Την Κύπρο που όλοι θέλουμε να δούμε. Τώρα είναι η ώρα να ξεκινήσουμε. Αργήσαμε ναι. Ας τρέξουμε λοιπόν. Και τότε θα είμαστε ακόμα πιο περήφανοι.

What changes as data grows?

Alice Karayiannis

Over the years, both structured and unstructured data has been increasing exponentially for various reasons. In the past, excessive data used to cause issues with storage cost whereas now this is no longer a great concern. However, as data grows, other issues arise which need to be dealt with. This essay will explain what 'Big Data' is, outline the changes that have been occurring, discuss what problems these changes may have caused and how they can be dealt with.

Introduction

With the drastic advances in technology, digital data has been growing vastly and it has become increasingly difficult to process it using traditional data processing applications. Data is continuously being collected from individuals worldwide through all sorts of devices such as smartphones, PCs, and other consumer devices. Consumer actions such as communicating, browsing, buying, sharing and searching each contribute to data growth [1]. As companies grow, so does their data. However, not all of them are able to face the problems arising when it comes to storing all of this information as the current backup methods have difficulty in handling data. In 1986, only 1 per cent of data was stored digitally, whereas by 2007, within 30 years, this data has increased to 94 per cent [Figure 1]. Working with big data is becoming increasingly difficult as new methods need to be found in order to process the large quantities of data efficiently. Big data analytics is a process used by many companies which examines big data in order to discover patterns, correlations and other useful information which could help their business. Is this good enough or do changes need to be implemented as data increases? What are the benefits and problems of data growth? How can we deal with big data? Are there any security issues? This essay will outline the consequences of big data and will explain what needs to be done in order to handle it.
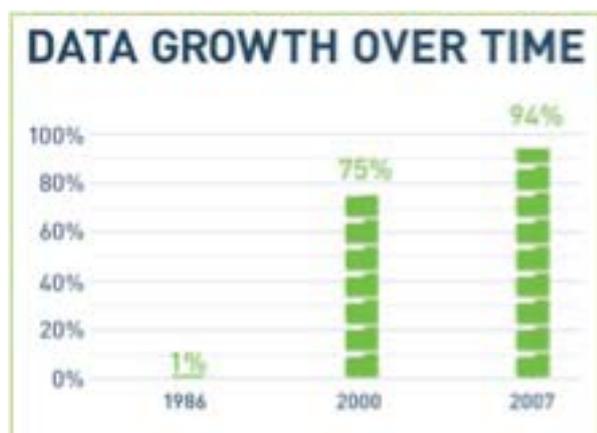
Figure 1: Data growth over time

What is 'Big Data'?

'Big Data' refers to datasets which typical software tools are unable to capture, store, manage, protect and analyse because of their sheer size. The data is either too big,

moves too fast, or doesn't fit the structures of our current database architectures. The terms 'volume', 'velocity' and 'variety' are commonly used to describe the different aspects of big data. 'Volume' refers to the increasing size of the data that is to be stored and analysed. The bigger the size, the more meaningful the information and hence the better the analysis made. Greater opportunities and possibilities arise because it becomes easier to find possible correlations and to predict things such as customer behaviour and thus big data plays a huge economic role in companies and organisations. Big data 'velocity' - the increasing rate at which data flows into an organization - also plays a big role in organisations since the storing and processing capacities of their IT systems are less than the rate at which data is flowing into these organisations and it is therefore becoming more difficult to handle it. Many applications rely on large quantities of high velocity data streams as user demand for real time streaming data increases. Lastly, big data is characterised by its 'variety' - the diversity of the source data - since it includes photographs, audio, video, etc. as opposed to the past where the only data to be processed was documents, financial models, complex simulations and personnel files [2]. In a few words, the source data is diverse and quite messy; it doesn't fall into neat, relational structures which come ready for integration into an application. A lot of important information may be lost during the procedure of converting source data to processed application data due to mistakes or hardware and software problems; how can we manage to keep every bit of information in order to make use of it afterwards? How can we prevent malicious misuse of this data? To gain value from big data we must choose an alternative way to process it and protect it.

Problems arising due to Big Data and how to deal with them

One of the main issues concerning big data is the rate at which data is being created and stored; it is rising significantly faster than the bandwidth of network connections, at 41% per year [3]. Big data is in need of new technology solutions due to problems arising by the three above terms: volume, velocity, and variety. As volume increases, traditional backup becomes unmanageable. As the types of data increase, so do the applications which help create and use the data, and backup tools are not fast enough to cover all
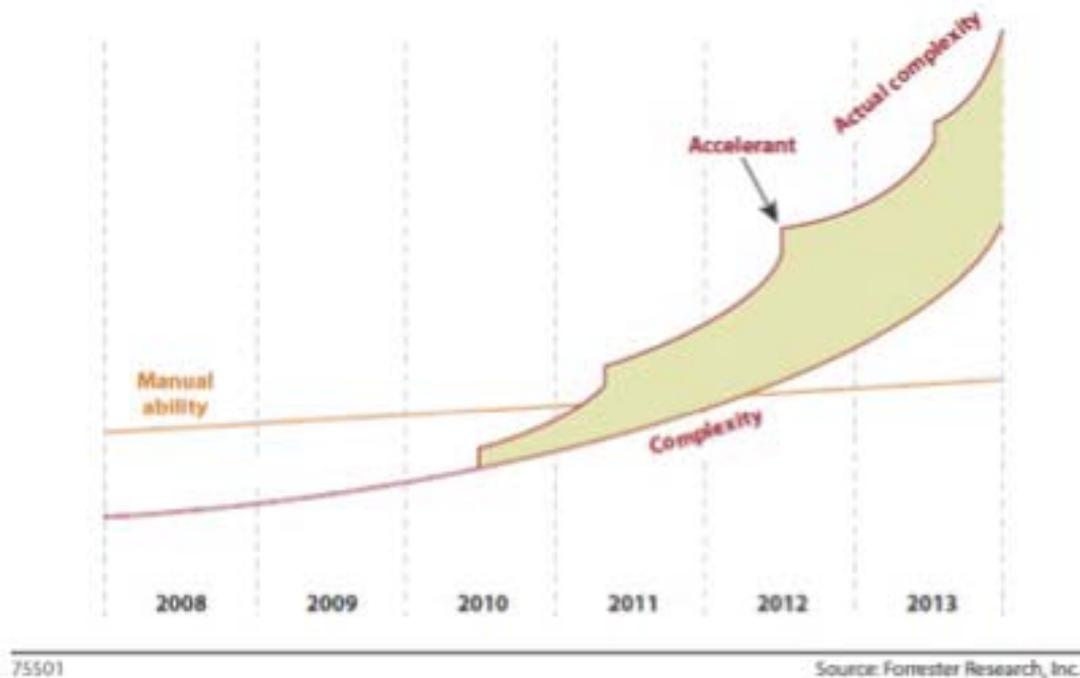
Figure 2: Accelerants make actual complexity even worse than expected complexity

customer needs. Furthermore, big data users want high-performance access to big data at any given time and therefore data recoveries should happen quickly. To make good use of this data alternative ways of storing and processing it need to be found as opposed to traditional methods used in previous years. Big data is also becoming more complex and new technologies - such as data virtualisation and consumerisation - known as 'accelerants' can change the data and its context faster than we can cope. However, using accelerants to common practices has been proven futile [Figure 2]. As mentioned earlier, big data analytics can reveal important information which was too costly to process in previous years. SQL databases can no longer handle the growing quantities of structured data and are limited in their handling of semi-structured and unstructured data. For this reason, alternative storage models for data known as 'NoSQL' databases have been introduced [4]. A NoSQL database, as opposed to traditional relational databases, stores and retrieves data using a mechanism that uses less constrained consistency models. One of the most common NoSQL databases is known as 'Hadoop'. The Apache Hadoop open-source software library uses a simple programming model for the distributed processing of large data sets across clusters of computers, and detecting and handling failures at the application layer. It is basically a platform for distributing computing problems across a number of servers [8]. It processes data through parallel processing, meaning that the data is split across multiple nodes in a large computer cluster, and this allows it to be analysed across large numbers of low-cost computing nodes.

In 2010, Facebook was the largest deployment of Hadoop with a 30PB (Petabyte) database [5]. Hadoop provides the first executable platform for big data analytics. Apart from having to store it, in order to be able to use data it must firstly be analysed and techniques such as machine learning, natural language processing, predictive modelling, etc. are needed.

Another technology advancement that enables us to make the most of big data and big data analytics is cloud computing. This uses networks of large groups of
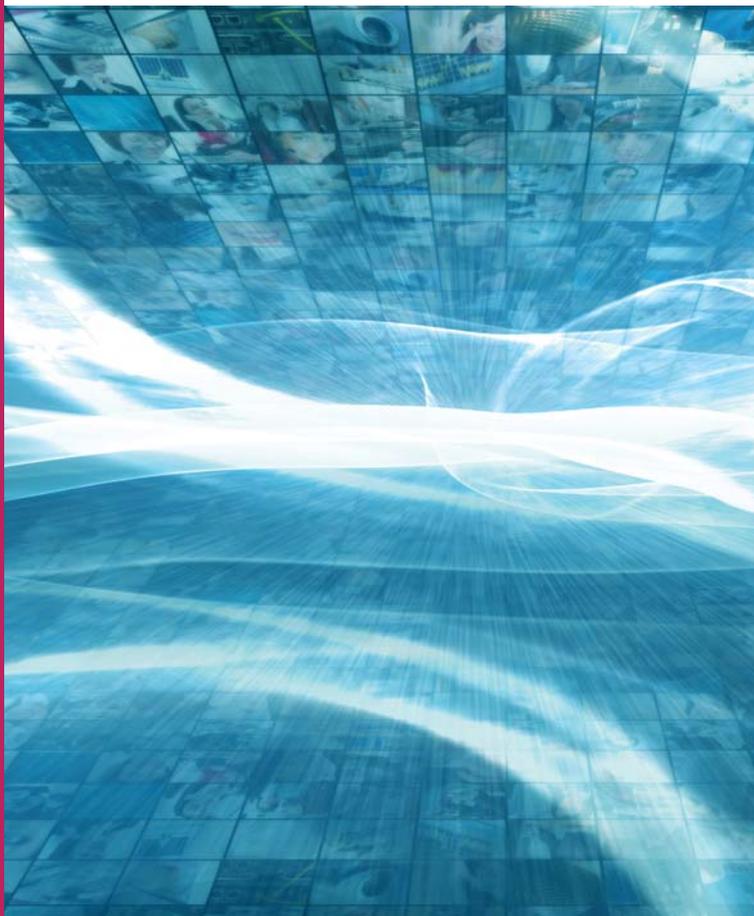
servers running at low-cost technology in order to store data. This means that local computers no longer become overloaded when running applications and hence hardware and software demands on the user's side

decrease since the only thing required of their computer is to be able to run the interface software of the cloud computing's system, e.g. a Web browser. Organisations using cloud computing save money since less IT infrastructure is required and hence less staff is needed to take care of it. Clusters of servers are required in big data environments in order to support the tools that process the large volumes, high velocity and varied formats of big data [7]. With the growth of big data and the fact that it is becoming more readily available, both companies and individuals may be threatened with security issues. Big data can be easily misused by those who have access to it and information can be deliberately leaked. Data breaches could expose personal consumer information, confidential corporate information, as well as national security secrets [1]. Criminals could use big data in an unauthorised manner in order to improve their exploits. Data can be copied and used by more than one person, especially when there are no intellectual property rights

attached to it. Many individuals do not like the idea of information about them being spread openly and used by other, anonymous people, because they feel that this is an intrusion to their privacy. It is therefore essential to find the appropriate technological and policy tools to address data security.

Changes and benefits arising due to Big Data growth

As mentioned above, storage is not the real issue but rather what is done with this data, how it is being handled, i.e. captured, stored, managed and analysed. Big Data gives us access to all kinds of information and enables us to make use of it. Organisations can collect more accurate and detailed information on their performance in order to be able to make better decisions on how they are managing their business. The McKinsey Global Institute estimated that Big Data could save $149 billion in government administration costs per year across Europe [1]. It also allows companies to give better services to their customers by collecting customer-specific data about different products and their preferences, something which will help in their productivity growth. For example, online retailers are able to collect histories of their customers' every click and interaction within their website, meaning that they could then use this information to recommend similar products and this gains them a competitive advantage. Competitiveness will also increase amongst organisations and companies, something which will force them to take big data seriously and find new approaches to processing, managing and analysing their data, in order to collect specific valuable information from the data they come across and benefit from it. Financial fraud within companies could also be detected and prevented by flagging data which seems suspicious for further review via fraud analytics. However, many organisations do not have the right tools in place to derive the appropriate insights from big data for better decision-making so new staff may need to be hired.

Conclusion

In order to capture the full potential of big data, several issues will have to be addressed such as the ones mentioned above: data analytics through NoSQL databases such as 'Hadoop', or cloud computing. Data is growing at exponential rates and without systems

in place to manage and organise this growth we stand no chance in the future. As previously mentioned, it is not enough to simply accelerate the same procedures and methods. By using big data we could eventually manage to allocate resources based on what we really need. Organisations need the correct technology and management in order to optimise the use of big data but to also take care of any security issues present.

Fortunately, 2013 seems to be the year of 'Big Data Startups' with new companies offering several of the above solutions to help organisations to manage and maintain all the data that they are accumulating [6].

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Cypriot Intangible Cultural Heritage
DIGITIZING FOLK DANCES

Andreas Aristidou, Efstathios Stavrakis & Yiorgos Chrysanthou

Cyprus has a long and rich history of dance tradition which unfortunately, year after year, tends to be forgotten; thus, it is our duty to help documenting and disseminating our dance heritage to the younger generations. In this work, we aim to preserve the Cypriot folk dance heritage, creating a state-of-the-art publicly accessible digital archive of folk dances. Our dance library, apart from the rare video materials that are commonly used to document dance performances, utilises three dimensional motion capture technologies to record and archive high quality motion data of expert dancers.

Introduction

Cyprus has a rich history of over 10,000 years and a cultural heritage which, due to its location between three continents, has been influenced by various civilizations. Many academic and industrial organisations took advantages of the recent technological advances in Information and Communication Technologies, and have attempted to record, curate, remediate and preserve mostly the tangible part of the Cypriot cultural heritage. However, Cypriot cultural heritage also encompasses a range of important intangible assets (e.g., folk dances, traditions, the art of pottery). According to the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage (ICH)[1], ICH is the mainspring of humanity's cultural diversity and its maintenance is a guarantee for continuing creativity. ICH creations are transmitted orally or by gestures and they are modified over time through the process of collective recreation, and/or changes in the way of life over the years. Thus, it is necessary to document and disseminate these intangible assets of the Cypriot heritage in order to preserve them and pass them over to the younger generations.

Performing arts and especially folk dancing is an important part of the cultural heritage of the island. Folk dancing cannot be easily preserved and its dissemination to the younger generations has become challenging for the few cultural institutions offering lessons; the Cypriot folk dance heritage is primarily transmitted by dance teachers and some of the senior citizens, as well as rare video recordings from local festivals, weddings and other social gatherings. In the Computer Graphics and Virtual Reality Lab[2] (VRL), we aim to develop the first high quality digital archive, in collaboration with local cultural institutions; our intention is to digitize, record, and archive the Cypriot folk dance heritage, as well as to disseminate it to the wider local community and serve as a reference for related research activities. The Cypriot folk dances have never been before systematically recorded and archived using motion capture technologies. Currently, two dimensional video recordings are used to document traditional Cypriot dance performances, which however have many limitations, such as occlusions or a fixed 2D camera viewpoint. VRL uses advanced 3D motion capture technologies to digitize Cypriot folk dances free of most limitations associated with traditional 2D video recording. In collaboration with expert performers from local cultural institutions Cypriot folk dances are digitally captured and stored. This high quality data can be subsequently used for reproduction, analysis, documentation, as well as research.

Related Work

Over the last decade, many works aimed at capturing the tangible part of the Cypriot cultural heritage; for instance, Sofocleous et al. [1] have documented the Asinou church, a Byzantine painted church dedicated to the Virgin Mary. The authors created a three dimensional visualization of the monuments in a virtual world, combining various photogrammetric procedures. Agapiou et al. [2] designed a web-based environment with a Monument Information Database that concerns the ten painted Byzantine Churches of Cyprus that are listed in the UNESCO World Heritage List (WHL), while Bariami et al. [3] proposed a method for geometric documentation of Cypriot monuments of the UNESCO WHL using complementary techniques. Zányi et al. [4] presented a computer reconstruction method that simulates modern lighting and the candle light of Byzantine art for better representation of the atmosphere and environment of the

1. UNESCO, http://www.unesco.org/

2. VRL Lab, http://graphics.cs.ucy.ac.cy

buildings and paintings in Byzantine times. Ioannides et al. [5] [6] presented various methodologies for digitally capturing and documenting ancient monuments, including buildings, sites and pottery.

However, very few have been working on documenting or digitising the intangible part. Stavrakis et al. [7] presented an early version of the digital dance library at VRL. An interactive game for teaching dances using low cost depth motion capture systems (such as Microsoft Kinect system) has also been designed for dissemination. However, in order to have an efficient and more complete system, further motion capture sessions are required to enrich the database. This can be both time consuming and tedious since raw motion captured performances have to usually be post-processed in order to eliminate any unrealistic and unnatural poses occurring during the digitization process.

Motion Capture Technology

Optical motion capture is a technology used for turning the observations of a moving subject into 3D position and orientation information about that subject. Motion capture devices allow the recording of live motions by tracking a number of key points in space over time, which are translated into a 3D digital representation. The captured subject can be a moving object (such as a legged character), with the key points positioned on the object such that they best represent the orientations of its moving parts. This data can be used for reconstruction of the performer's skeleton, tracking and modelling of the motion. Motion capture data is extensively utilized in computer-generated characters often seen in television commercials to promote products, movie productions, such as Avatar, The Lord of the Rings, etc. and many 3D computer games.

The VRL lab has been recently equipped with a new motion capture system (the latest Phasespace[3] Impulse X2 motion capture system with active LEDs) and a 3-wall immersive virtual reality set-up. The system uses 8 cameras that are able to capture 3D motion using modulated LEDs. These cameras contain a pair

of linear scanner arrays operating at high frequency each of which can capture the position of any number of bright spots of light as generated by the LEDs. It offers a fast rate of capture (960Hz) and allows the individual markers to be identified by combining the information from several frames and hence identifying the marker from its unique modulation. The markers are placed at strategic points on the articulated body (i.e., of a performer) so that these points can be easily and accurately located by the cameras and to provide the rotation of each limb segment. The subject can then move freely within a specified space (the capture volume) while the markers attached to its body are tracked over time and used to reconstruct a complete three-dimensional pose of the subject's body, at any point in time. Our system is able to capture 3D motion data of a single character over time, maintaining the correct human proportions and the naturalness of the action. The mobility of our motion capture system, its wireless structure and advanced software, enables motion capture sessions to be performed in external, non-laboratory environments. Figure 3.1 shows a dancer wearing the motion capture suit, where its movements are captured using the PhaseSpace Impulse X2 motion capture system.

Figure 3.1 A dancer wearing a motion capture suit at VRL, where its movements are captured using the PhaseSpace Impulse X2 motion capture system.

3. Phasespace Inc: http://www.phasespace.com

Motion Capture Digital Dance Library

We aim to create a point-of-reference publicly accessible digital archive of folk dances using 3D motion capture data (with metadata). In order to ensure that Cypriot folk dances are sufficiently well documented, recorded and archived, dance performances should be captured directly from expert dancers using motion capture technology. The archive will give free access to 3D motion capture (mocap) data, video data, photographs, drawings, text and metadata. It is important to note that capturing a dancer's performance does not mean capturing of the dance itself; the quality characteristics of human behaviour and dance motion are subjective and depend on, in addition to the dancer's skill and experience, momentary feelings, the external environment etc. For this reason, we have tried to reduce the potential influence of external factors that affect the quality of the motion during the capturing procedure. For instance:

- The mocap suit has markers attached on every limb which for some performers may feel uncomfortable or restricted at first. To mitigate this problem we allow performers to first "warm-up" and experiment with the wide range of motion the mocap suit allows, prior to any actual motion capture session.

- The size of the laboratory restricts the movements of the performer to a limited space; in addition, the feeling of laboratory environment reduces the user's intimacy with the area, thus limiting his creativity. This can be solved by capturing in environments which are familiar to the dancer, such as dance schools and/or local festivals.

In order to facilitate the long term maintenance, we designed an archive that can easily be enriched with new data over time. We have employed a relational database schema to structure the information within the archive, which encompass all types of data associated with dances. The archive is scalable, so that data and metadata, such as motion capture and video data can be accumulated as they become available. It also provides for archiving existing material irrespective of the availability of motion capture or video data. The relational database forms the backend of the archive, while an online web portal enables public access to the data of the archive, as well as editing capability to privileged users.

Currently there is no standardised method of dance recording and archiving and there are several on-going efforts, e.g. that of the Dance Heritage Coalition[4]. We are keen to develop a simple schema that can be readily used to record those aspects of the motion captured dances which will allow us to disseminate the data to the wider research and performing arts communities. Nevertheless, the dance database is planned to be organised according to ACMI (actions' creativity metadata interface) regulations, aiming to be compatible with EUROPEANA[5] (the EU library) initiatives, and therefore available for further re-use. It is thus very important to capture the human motion itself, directly from expert dancers, allowing the reuse, study or teaching of the, usually structured or complex, motion..

Our digital archive supports data types that are already available, as well as those we aim to produce. This includes textual descriptions about dance types, video recordings and motion capture data of individual performances, metadata of dancers appearing in performances and the locations these dances are performed. The schema of the database used to structure the different information about Cypriot folk dances consists of 6 main categories:

- dances - each entry of this category is a unique dance plus the accompanying metadata, which include the name of the dance, the type of dance, photos, the region it originates from and a description.

- performers - each entry describes a unique performer. Fields of the table include the name and age of the performer, his/her gender, the years of experience, and whether is a professional or amateur performer.

- locations - each entry is the place that the data have been captured. Typically these locations have a name, address, a contact and the name of an administrator.

- videos - each of the video data entries is a video recording of a dance performance. The video data has a timestamp to record the date the video was captured, the filename of the actual video, the

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4. Dance Heritage Coalition: http://www.danceheritage.org/

5. Europeana: http://www.europeana.eu/

format and an arbitrary description.

- mocaps - each entry is a description of the motion capture data of a unique dance performance. The motion capture data has a timestamp field to record the time it was captured, a filename pointing to the actual motion data and a description field to hold generic information. The mocap data will be available in the widely used C3D, FBX, and BVH motion data formats.

- performances - is the central table of the schema. Each entry is a unique performance of a dance and has a timestamp field and a description of the performance. The rest of its fields contain indices of entries in other tables which enables creating one-to-many relations for a single performance. A performance entry is a unique manifestation of a dance type and thus the dance index is stored in a performance's field to relate them. Each performance may be related to multiple performers, which is necessary for dances with groups of performers. A performance takes place at a single location, but the venue may be reused for multiple performances, therefore each performance records where it has taken place. Similarly, a list of video and a list of motion capture data indices are stored to relate a performance with the relevant data. Note however, that there may be more than one dataset for each type. For instance, when multiple cameras are used, a performance will have multiple video data files associated with it.

Our dance library aims to store high quality motion capture data; in order to be more specific, we store the following digital data:

- **Video:** Dance recording using an HD camera. Data are stored in AVI (compressed using the Xvid MPEG-4 codec) or FLV (flash) formats, as shown in Figure 3.2(a). The user has the opportunity to download standard quality and/or high quality video to check whether the performance is the desired and meets the specifications of his work, before downloading the motion files, that are in general much larger in size.

- **Mocap data:** the standard motion capture format (C3D) that stores 3D coordinate information, analogue data and associated information used in 3D motion data capture and subsequent analysis operations, as shown in Figure 3.2(b). The C3D file format is a public domain, binary file format and it is adopted by all major 3D motion capture companies. All the required information can be seamlessly transferred between researchers and laboratories, regardless of the hardware or environment used to collect the data. In addition, the user has the opportunity to create his own motion file (such as BVH or FBX) and to apply post-processing techniques on the provided raw data in order to correct the position of missing markers or to use them for studying or researching purposes.

- **Motion file:** the motion of the performer is saved as a BVH format, as shown in Figure 3.2(c). BVH stands for Biovision Hierarchical Data; this format is mainly used as a standard representation of movements in the animation of humanoid structures. It consists of two parts where the first section details the hierarchy and initial pose of the skeleton and the second section that contains the motion data, which provides per frame positions and orientations of joints and limbs.. It is currently one of the most popular motion data formats, and has been widely adopted by the animation community. Any 3D virtual character (avatar) fitting the skeletal structure in a motion file can thereafter perform the motion by using the stored motion data.

- **Character data:** A virtual character (avatar) with mesh has been incorporated to the motion file (this format will not be always available), as shown in Figure 3.2(d); FBX format is now owned by Autodesk. It is used to provide interoperability between digital content creation applications. It maintains the full fidelity and functionality of the original file and can be manipulated by multiple programs; it is used for creating interoperability between 3D applications.

- **Web interface:** A 3D web application based on the Unity3D[6] engine is provided to allow users to view

6. UNITY 3D: http://unity3d.com/
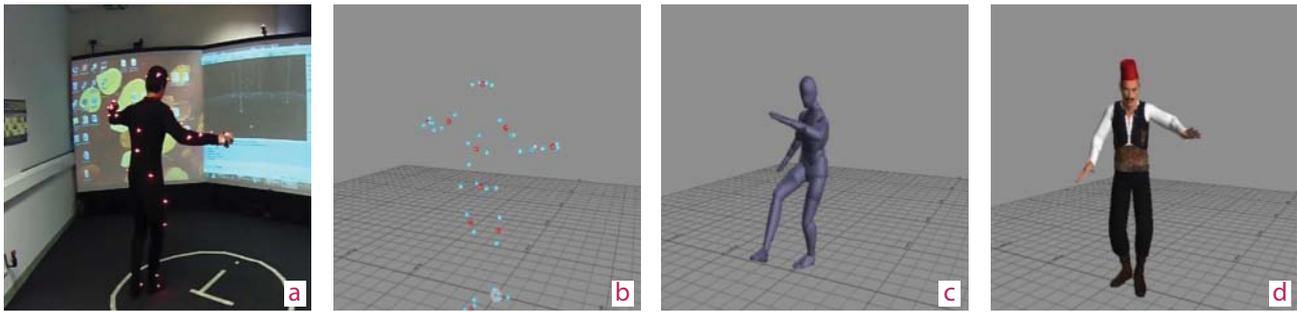
Figure 3.2 (a) the video format, (b)the mocap format, (c) the motion file format and (d) the character format.

the motion capture data online or preview before downloading them.

A prototype dance digital library has already been implemented at the UCY, storing mocap data of folk dances. The dance library is publicly accessible via the WWW, at: http://dancedb.cs.ucy.ac.cy/ [8].

Conclusions and Future Work

In this work we have paved the way for documenting Cypriot folk dance performances, using 3D motion capture technology, aiming to create a reference digital dance library, supplemented with standard text, drawings, pictures and video. The motion capture dance library aims to document the Cypriot dance cultural heritage, particularly for traditional dances that tend to be neglected or forgotten. Using motion capture technologies, not only are we setting an example for safeguarding the survival of these important intangible assets objectively, but also enable the reuse, study and teaching of these structured and complex motions. The high quality motion capture data that are archived in our database can find several applications, including academic (for research purposes) and industrial (in the film and game industry).

In the near future, the database will be enriched with various solo or group dance performances and it will be constructed and notated for further research activities. Next step is the qualitative and quantitative, as well as the semantic representation of Cypriot folk dances for efficient motion retrieval. The library will be indexed and notated using high level components, based on the characteristics of the dance motion. A search by example engine will be incorporated that will return dances that comprise similar movements to a given action. The system will also be able to log a movement, interpret it and find whether it is contained within a dance performance.

In addition, we aim to develop and distribute a game that uses low cost depth sensors, such as Microsoft's Kinect, exclusively for teaching Cypriot folk dances, as a means of promoting and preserving the local folk dance heritage. The game will feature the 3D avatar of a Cypriot dance teacher dressed with the traditional costume. The virtual teacher will support a range of pre-captured dances performed by experienced local folk dancers. The user will select the dance he/she would like to learn from the motion capture database and the virtual dancer will demonstrate the motion to the user. Thereafter, the user will be asked to perform alongside the virtual teacher; the motion will be captured in real-time via a low cost depth sensor (ideal for home users) and will be attached to a second virtual avatar, so that the user has visual feedback of his movements. A motion matching algorithm will be implemented to compare the movements based not only on posture matching (meaning the physical position of the avatar) but also on the quantitative and qualitative characteristics of the motion (LMA entities), the required effort, the emotional state, as well as the relevance to the performer's intention. A feedback system that will provide hints and advice to the end-user with regards to his performance, indicating parts of the dance that would require more practice and attention by the user.

The proposed dance database could also be utilised for dance similarity comparisons, helping to unveil cultural similarities between neighbouring countries (dance ethnography).

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DO YOU KNOW THESE COMPANIES?

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"*The Internet and subsequently the World Wide Web, have given rise to a new multibillion dollar industry with a large component centered around the San Francisco Bay area and more specifically Silicon Valley. The right mix of brains, desire, money in terms of venture capital, and academic resources have created innumerable start-ups many of which managed to have "the right staff" and propel themselves to international fame. The pattern is all too familiar: a few bright young people have an idea, have venture capital buy in, create a product or (mostly) service based on the web, go public through IPOs and make money by selling your information to the marketers.*"

FOTO FROM: http://www.fastcompany.com
From left: The late Apple cofounder Steve Jobs, Facebook CEO Mark Zuckerberg, Google CEO Larry Page, and Amazon CEO Jeff Bezos. | Photos courtesy of David Paul Morris/Getty Images (Jobs); Justin Sullivan/Getty Images (Zuckerberg); Chip East/Reuters (Page); Mario Tama/Getty Images (Bezos).

In these pages we briefly explore some of the main players in the industry as well as companies they have created.

The list is by no means exhaustive, nor does it describe a homogeneous group. Companies such as Amazon, eBay are online merchants while companies such as Google, Yahoo!, Facebook depend on advertisement revenue to operate. Nevertheless both groups embody the Internet entrepreneurship and are prime examples of what can be done.

Google

If there ever was a company that embodied the spirit of the new economy based on Internet services more than Google it certainly has escaped everyone's attention.

Google Inc., the company, started life on September 4, 1998 in Menlo Park, California. Its founders, **Larry Page** and **Sergey Brin**, met almost three years before at Stanford University as PhD students. As their common interest was searching the web they had started a search research project. Their idea of determining a websites's relevance based on the number and importance of the pages out there that linked back to the site and not simply the number of times a term appears in a page played a fundamental role in the early success of the search engine especially compared to its peers.

Google, a misspelling of "googol", a very large number of 1 followed by 100 zeros, was incorporated based on an investment of 100000 dollars from **Andy Bechtolsheim**, a co-founder of Sun Microsystems. Larry and Sergey became presidents of things with seasoned executive **Eric Schmidt** (Sun Microsystems, Novell) providing adult supervision.

Besides the well known search engine, Google produces and provides many other products and services, such as Android, the mobile device operating system found in 80% of all smartphones sold worldwide, Google+ the social network counterpart of Facebook, gmail, google drive and many more. However, the majority of Google's revenue, some 43.7 billion out of a total of 50.2 billion dollars, comes from advertising.

Google is known for its university-like working environment where people ride their bicycles, adorn their offices with all sorts of paraphernalia and participate in all sorts of activities often times unrelated to their main job. At Googleplex, as the corporate headquarters complex at Mountain View, California are called, people work and play at their pace, round the clock. What sets the tone and rhythm is deadlines and responsibilities: it is not how much you work, it is how you work to meet certain deadlines and achieve certain objectives. In that respect, Google is unique amongst even high tech corporations.

Facebook

Facebook needs no introduction. With over 1 billion active users and 180 petabytes of data per year, Facebook is the online social networking service. There has even been a movie regarding the origins of Facebook called *The Social Network*.

Facebook was founded on February 2004 by **Mark Zuckerberg** with his Harvard University roommates **Eduardo Saverin**, **Andrew McCollum**, **Dustin Moskovitz** and **Chris Hughes**. The name Facebook comes from a colloquialism for the directory which is given to students at some American Universities.

The story starts when Mark wrote a program called "Facemash" on October 28, 2003 which allowed for the posting of photos and the comparison of these on a pairwise fashion to declare who is the "hotter" person. In doing so, Mark hacked into Harvard's computer network and stole student ID photos. The site was very popular with Harvard students. However, it was shut down by the University and charges were brought on Mark for breach of security, violating copyrights and violating personal privacy. These charges were eventually dropped.

The following semester Mark created a new website inspired by Facemash. On February 4, 2004 the site 'thefacebook.com" went live. However, Mark was accused by three Harvard seniors that he had stolen their idea for creating HarvardConnection.com. A lawsuit was filed which was settled in 2008. Initially, Facebook was a Harvard University phenomenon. Gradually, however, it was spread to other Universities. In due course the service was made available to everyone over 13 years of age.

In June 2004 Facebook moved its operations to Palo Alto, California and received its first investment from PayPal co-founder **Peter Thiel**. In May 2005, Accel partners invested 12.7 million dollars in Facebook. On October 24, 2007 Microsoft announced that it had purchased a 1.6% share of Facebook for 240 million dollars. In 2011

Facebook moved to the former Sun Microsystems campus in Menlo Park, California.

Facebook went public on May 18, 2012 with much fanfare. After some initial technical problems and issues with trading which led to lawsuits Facebook embarked into expanding its mobile presence and monetizing via ads the millions of interactions that go on every day. Today, Facebook is an S&P 500 company with yearly revenues of the order of 8 billion dollars.

Twitter

If revolutions were to be fought on the digital superhighway that we all call the Internet/Web, twitter would have been a formidable weapon, and some may say, a weapon of mass destruction. The so called "Twitter Revolutions" which include the 2011 Egyptian revolution, the Tunisian protests of 2010 and 2011, the Iranian election protests and others are usually mentioned from those in favour. Of course the jury is still out on this as there are many different views on the subject.

Twitter is an online social networking and microblogging service that allows on to send short text messages up to 140 characters long called "tweets". For this reason it is called "the SMS of the Internet". It was created on March 2006 by **Jack Dorsey, Evan Williams**, **Biz Stone** and **Noah Glass**. Today, more than 500 million users post in excess of 340 million tweets every day

performing more than 1.6 million searches in the process.

Twitter started life as an internal communications service for Odeo employees, a podcasting company. Twitter was then presented to the world in 2007 and made very visible during the South by Southwest Interactive conference. During the conference twitter usage increased from 20000 to 60000 tweets per day. The company experienced a rapid growth in the ensuing years with investments from Venture Partners and Benchmark Capital. Its usage spiked during prominent events such as 2010 FIFA World Cup where fans wrote 2940 tweets per second, the 2011 FIFA Women's World Cup Final with 7196 tweets per second as well as during other events such as Michael Jackson's death.
On November 7, 2013 the San Francisco based Twitter became a public company trading at the New York Stock Exchange. Today, Twitter is focusing on defining a revenue strategy through advertisements not only in the US but in other countries such as Brazil, France, Japan and the UK.

Amazon

Back in 1994 when nobody really outside the academic and scientific community knew what "the web" was, **Jeff Bezos** had a brilliant idea: sell products through the web. To do this he resigned his job as vice president of D.E.Shaw & Co, a Wall Street firm, and moved to Seattle, Washington. There, he began creating a business

plan of what amazon would be. He picked 20 products he felt were promising to be marketed online and narrowed the list to 5: compact discs, computer hardware, computer software, videos, and books. He finally settled for books.

Amazon.com Inc, was initially incorporated in Washington in 1994 and began service in July 1995. The name had to start with an "A" and be memorable. Jeff went looking through a dictionary and settled for Amazon, a name that satisfied both criteria.

Within two months from its establishment Amazon was selling 20000 dollars' worth of books every week. The company did not anticipate being profitable for the first four to five years. This allowed for a slower than expected growth, something that did not please many investors especially after going public in May 15, 1997. However, after Amazon survived the dot-com bubble of the late 90's, it managed to expand significantly and become the largest online retailer in the world covering a diverse array of products.

Today, Amazon.com Inc, has become such a household name having more than 500 million unique visitors per month. Amazon's latest foray into digital media dissemination via the web, tablets and mobiles has created a total coverage of the methods one can access both new material as well as digital material that he has purchased online. Kindle, the Amazon marketed tablet, has fared favorably with the market leaders and has facilitated the new digital lifestyle.

Baidu

People think that Google is perhaps the only significant search engine around (notwithstanding Bing and Yahoo!) However, in China Baidu is king! Over 80% of the country's online search queries are served by Baidu.

Baidu Inc., incorporated on January 18, 2000, is a Chinese web services company with headquarters in Haidian District of Beijing, China. It was established by **Robin Li** and **Eric Xu**. Robin had previously worked for IDD Information Services, a Dow Jones and Company division building search software for Wall Street Journal. He is the holder of the RankDex site-scoring algorithm for search engine results. This algorithm was used for the Baidu search engine.

Besides search, Baidu offers a number of other services, much like Google does. However, Baidu has yet to match Google's breadth and depth as well as advertising revenue, which admittedly is Google's magic.

Airbnb

Now, this is a service, and a company behind it, that I think embodies the spirit of the web and the entrepreneurship that comes with it: a peer-to-peer apartment and house online reservation service.

Airbnb, allows anyone with a space to rent, whether an apartment or a house, to publish information about the space and have it rented. Users register to create a personal profile. Every property is associated with a host whose profile includes recommendations, reviews and other information entered by users who had used the facilities. There is also a private messaging system for communication between users.

Airbnb is the brainchild of **Brian Chesky** and **Joe Gebbia** and was founded in October 2007 in San Francisco. The original idea was to provide bed and breakfast accommodation to those places which was hard to find. A third co-founder, **Nathan Blecharczyk** joined the team in February 2008. With investment from Greylock Partners and Sequoia Capital Airbnb became a major player in this space having 10 million nights booked in June 2012. By late December 2013, the company reported that it had more than six million guests and nearly 250,000 properties.

Dropbox

Dropbox is a file hosting service operated by Dropbox Inc. It is headquartered in San Francisco, California and was founded in 2007 by **Drew Houston** and **Arash Ferdowski** with original funding from Y Combinator, a "seed accelerator" which provides money, advice and connections.

According to Drew the idea of dropbox was conceived after repeatedly forgetting his USB stick while a student at MIT. At the time the available internet services were inadequate suffering delays, issues with large files, bugs or too complicated to use.

Dropbox uses a freemium business model where users are offered a given space for free and they have to subscribe for additional space. There is no limit on the uploaded files so long as there is space available for the user who performs the upload.

Evernote

Evernote is a suite of software and services used for notetaking and archiving. A "note" can be any piece of text, webpage, photo, voice memo and even handwritten note. Notes can have attachments and can be organized in folders, be tagged, annotated, given comments, searched and exported as part of a notebook.

Evernote was founded by **Stepan Pachikov** in 2008. The company has raised an initial 20 million dollars capital from Sequoia Capital with participation from Morgenthaler Ventures and DoCoMo Capital. Subsequent investments have led to the company having secure a total of 225 million dollars in capital investment.

Evernote users a freemium business model with free usage of around

60 MB/month and additional bandwidth based on subscription.

Tumblr

Tumblr is a microblogging platform and social networking website allowing users to post multimedia and other content to a short-form blog. Users can follow other users' blog or they can make their blog private. The service was founded by **David Karp** in Febrouary 2007. It is located in the Flatiron District of New York City's Silicon Alley. As of November 30 2013, Tumblr hosted 152.2 million blogs. On May 20, 2013 it was announced that Yahoo! Would acquire Tumblr for 1.1 billion dollars in cash a deal which also allowed David to remain the CEO of the company.

Flickr

Flickr is an image and video hosting website as well as web services suite that was created by Ludicorp, the company that **Stewart Butterfield** and **Caterina Fake** had founded in Vancouver, Canada.

Flickr was launched in February 2004 and acquired by Yahoo! In March 2005 for 35 million dollars.

Flickr's first user was as a chat room called FlickrLive with real-time photo exchange capabilities. In due course the chat room capabilities were dropped and Flickr became a photo sharing service featuring tags which enable search, marking photos as favorites, group photos, and much more.

Flickr's business model is to offer free services, free advertisement services called Ad Free, and paying services called Doublr.

Instagram

Instagram is an online photo and video sharing service with social networking capabilities. It was founded in San Francisco by Kevin Systrom and Michel "Mike" Krieger in October 2010. The service became very popular soon with over 100 million active users by April 2012.

Yahoo!

Yahoo! Inc., is one of the first Internet companies offering services such as portal, search, directory, mail, news and many more. It is headquartered in Sunnyvale, California and was founded, first as Jerry's guide to the World Wide Web in January 1994 and then as Yahoo! In March 1994 by **Jerry Yang** and **David Filo**. The

name "yahoo" is an acronym for "Yet Another Hierarchical Officious Oracle".

Yahoo! is one of the most popular websites in the United States. Roughly 700 million people visit Yahoo! every month generating annual revenues of close to 5 billion dollars in 2012 and employing 12300 employees as of September 2013.

The seeds of Yahoo! were planted at Stanford University where Jerry and David were graduate electrical engineering students. Yahoo grew rapidly through the 1990s to the point that 1998 Yahoo! was the most popular starting point for web users.

eBay

eBay is an internet consumer-to-consumer corporation which allows people to sell their goods based on either the auction model or via regular selling. Sellers gain reputation points based on how timely they ship sold products, how close they are to advertised information, and so on, while buyers gain reputation points based on their payment pattern.

eBay was founded by **Pierre Omidyar** in October 3 1995 and it is based in San Jose, California. It started as a side project which featured a number of other things. One the very first items auctioned was a broken laser pointer bought by someone who was looking for

broken laser pointers. This pattern repeated for a number of other items at which point Pierre realized that there was a true market for this sort of business.

In the ensuing months the site became so popular that the service provider demanded a change in connectivity type from individual to business. In order to offset the higher cost eBay started charging sellers. To everyone's disbelief seller kept on coming at ever increasing numbers. Growth was incredible as the site hosted 2000000 auctions, compared with 250,000 during the whole of 1996.

In 1997, Benchmark Capital invested 6.7 million dollars in funding. eBay went public on September 21, 1998 making Pierre an instant billionaire and eBay one of the most successful dot-com companies.

PayPal

PayPal is an international e-commerce business which allows payments and money transfers to be made via the Internet. It functions as an "acquirer", meaning that it processes payments for others such as online stores, commercial users, auctions sites and many more. For its services it charges fees. PayPal also processes credit card payments. As a financial institution it is subject to US laws and regulations. In the European Union it operates as a Luxembourg-based bank.

PayPal stated life in 1999 as a money transfer service offered by Confinity a payments and cryptography company founded by **Max Levchin**, **Peter Thiel** (early investor in Facebook), and **Luke Nosek**. Confanity was acquired by X.com an **Elon Musk** (Space X, Tesla Motors) company who in October 2000 decided that it would cease its operations and rename itself to PayPal.

The newly formed company and its service was an immediate success for eBay customers. By April 2000 more than 1 million eBay auctions used the Paypal service. The extend of the service use was so great that by 2009 the total volume of transactions was 71 billion dollars becoming the method of choice for more than 50 percent of eBay users. PayPal became a public company in February 2002 and acquired one year later by eBay for the sum of 1.5 billion dollars.

LinkedIn

LinkedIn is a business-oriented social networking website for professionals. It was founded in December 2002 by **Reid Hoffman**, and others from PayPal and Socialnet.com and it is located in Mountain View, California. Initial funding came from Sequoia Capital. The Company filed for a successful IPO in January 2011. Reid was an Executive Vice President of PayPal at the time PayPal was purchased by eBay and left to become one of

Silicon Valley's most prolific angel investors. He has been LinkedIn's first CEO before becoming Chairman and President in 2007 and Executive Chairman in 2009.

LinkedIn offers a number of innovative features such as maintaining a list of contacts of people who have a level of professional relationship. The degree of relationship, such as direct connections, second and third degree connections, can facilitate the creation of a professional network where people may be introduced to others or apply for a posted job position based on recommendations from others in the network.

YouTube

YouTube is a video-sharing website based on San Bruno, California. It was created by three former PayPal employees, **Chad Hurley**, **Steve Chen** and **Jawed Karim**. The story of the inspiration for setting up YouTube varies depending on who you ask, ranging from the inability to share videos during a dinner party all the way to inability to find videos of the 2004 Indian Ocean tsunami. Whatever the story is, YouTube started life with a venture capital infusion of $11.5 million by Sequoia Capital between November 2005 and April 2006. The success of the site prompted Google to make a successful offer of $1.65 billion in October 2006.

Since then YouTube has grown to be the largest video-sharing site being visited by more than 1 billion unique users per month with revenue being generated by thousand in-stream advertisements. It is estimated that over 6 billion hours of video are viewed per month, almost one hour for every person on Earth.

Netflix

Netflix is a subscription-based on-demand Internet streaming and DVD-by-mail service operating in North and South America, the Caribbean, UK, Ireland, Sweden, Denmark, Norway, Finland and the Netherlands. It has been founded in 1997 in Scotts Valley, California by **Marc Randolph** and **Reed Hastings**. Marc was a cofounder of MicroWarehouse, a computer mail company. He was later Vice President of marketing for Borland. Reed was a mathematics teacher and had founded Pure Software, a company specializing in Unix/C debugging tools.

Netflix has built its business on the mailing of DVDs to people's homes then moving to providing cataloguing and streaming services via the Internet in a way that brick-and-mortar retailers could not compete with. It has also played a prominent role in distributing independent films. Today, Netflix boasts almost 25 million US subscribers.

Hulu

Hulu is a website offering ad-supported subscription services for streaming TV shows, movies, trailers and other digital media to a variety of devices including browser, iTunes, TiVO DVR boxes, smartphones and many more. The services are available in the US only due to licensing restrictions. Plans for international availability (UK, Ireland) have yet to materialize.

Hulu has been founded in 2007 as a joint venture between NBCUniversal Television Group (Comcast), Fox Broadcasting Company (21st Century Fox) and Disney ABC Television Group (The Walt Disney Company). **Jason Kilar** was named as the first CEO of the company. The name Hulu comes from the Chinese (Mandarin) word *húlú* which means both "a holder of precious things" and "interactive recording", two meanings that are central to the company's mission.

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