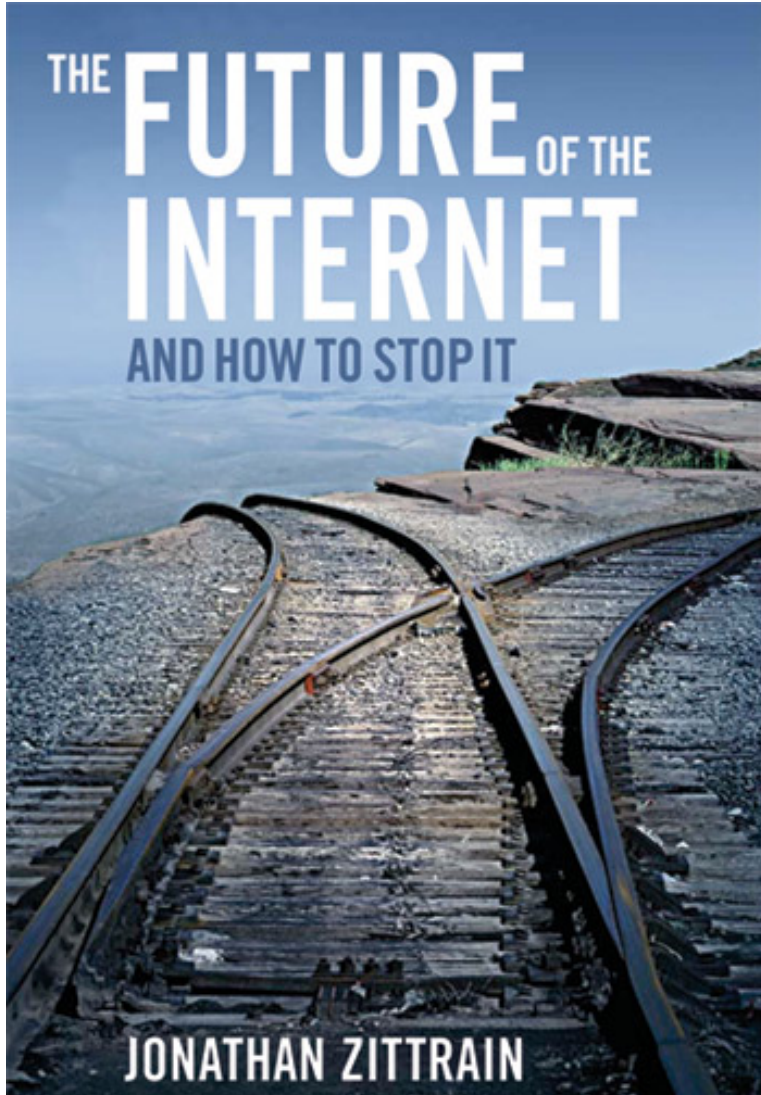# Open Platforms

Leslie Carr, University of Southampton

The Internet is Doomed!

- "This extraordinary book explains the engine that has catapulted the Internet from backwater to ubiquity…

- With the unwitting help of its users, the generative Internet is on a path to a lockdown, ending its cycle of innovation — and facilitating unsettling new kinds of control."

futureoftheinternet.org

Internet as a Generative System

- unanticipated change emerges through unfiltered contribution from broad and varied audiences
- same way that PC development has been unrestricted and open.
  - No-one controls what you can do with a PC, what programs you should be able to write, to run or what information you should be allowed to process.
- The very processes that could control the Internet to make it a "safer" place will also
  - restrict technological development
  - make the future of the Internet a much poorer place
    - the user experience
    - future economic activity

according to Zittrain

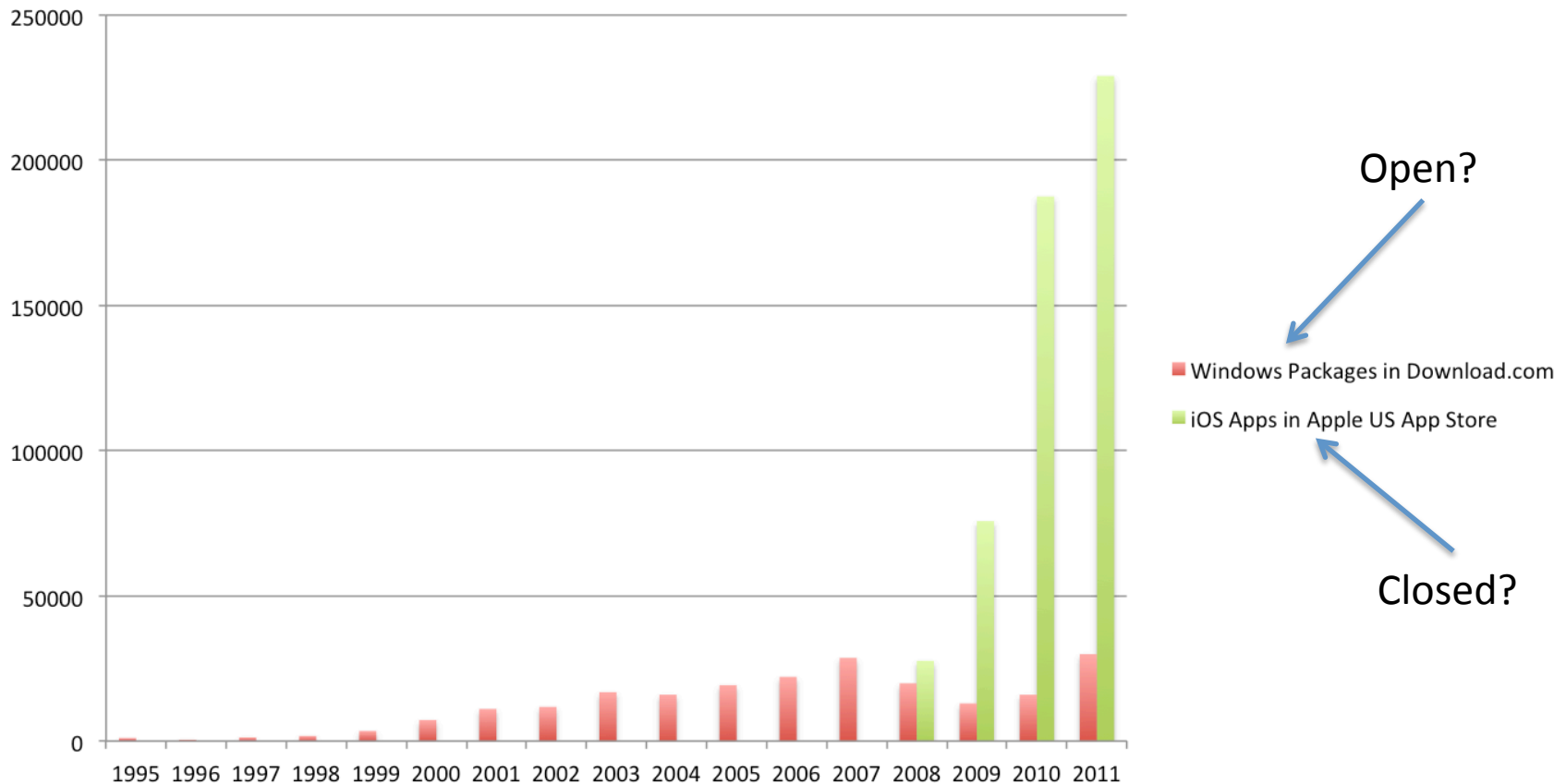# Example of Generative System: Building on the PC

- Kiosks
- Retail Point of Sales (POS) System
- Self-Serve Check in/Checkout Kiosk
- Information Kiosk
- Airport, Train station and Subway e-Ticketing Kiosk
- Self-Serve DVD Rental Kiosk
- Multimedia preview Kiosk
- Parking Machine
- e-Ticketing Kiosk
- ATM Terminal
- Multimedia Vending Machine
- Coin Exchange Machine
- Photo Kiosk
- Scientific Instruments e.g. Helium Ion Microscope
- Industrial Manufacturing Equipment

How often is a PC built into something rather than used as a PC?

Convincing argument, but is it true?

Generativity: contributions from software developers per year

- Windows Packages in Download.com
- iOS Apps in Apple US App Store

Open?

Closed?

This is one chart does not disprove Zittrain, but demonstrates that the situation might be complicated...

"Open" Platforms

Internet

The Internet is an open platform on which people are free to create new protocols and applications. It's not 'open' in other senses because it's a set of privately owned networks (ie the information superhighway is not a public highway)

"Open" Platforms

Internet

Web

The Web is an open platform on which people are free to create new kinds of sites, pages, services and applications. It's not 'open' in most other senses in that it's a set of private servers – there's no public space where you have a right to comment.

"Open" Platforms

Internet

Web

Wiki	Facebook	Twitter	YouTube	Google

All these new kinds of Web applications are open for people to use in innovative ways and to develop new kinds of service...

"Open" Platforms

Internet

Web

Wiki	Facebook	Twitter	YouTube	Google

Wikipedia	Social Applications	Media Channel	**X**

Except Google. You can't use Google as a platform – it has no APIs and it doesn't allow crawlers!

"Open" Platforms

Internet

Web

Wiki	Facebook	Twitter	YouTube	Google

Wikipedia	Social Applications	Media Channel	X

In that sense, Google is not 'open'. It's free, but you can't build a new service on it as a platform.

e.g. building on Twitter Platform

Mr Tweet, Brand Chirp, We Follow, Twitter Friends Network Browser, Friend or Follow, Featured Users, Tweepler, TwitterTroll, Refollow, Twitdir, Just Tweet It, Twellow, Twitaholic, Twitter Poster, Nearby Tweets, The Twit Cleaner, Twuffer, Twittercal, TweetLater, Twitter Dmer, TwitPic, Twt Poll, Twit Wall, Group Tweet, Backupify, Twitter Counter, Tweet Beep, Twitsay, Tiny Chat, Twit Cam, Chirp Stats, Tweet Stats, Twitter Grader, Tweet Volume, Twitter Analyzer, Tweetmeme, Topsy, Whos Talkin, Trendistic, Twitscoop, Echofon, Tweetie, Brizzly, OpenBeak, Dial2do, Tweetdeck, Twittad, Twhirl, Twittload, Twittonary

Top 50 Twitter Apps http://www.tuttoaster.com/50-amazing-twitter-services-that-you-do-not-want-to-miss/ , June 2010
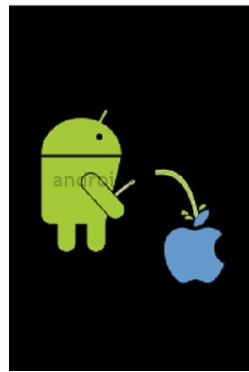
e.g. building on Twitter Platform

EXCEPT TWITTER CLIENTS

Mr Tweet, Brand Chirp, We Follow, Twitter Friends Network Browser, Friend or Follow, Featured Users, Tweepler, TwitterTroll, Refollow, Twitdir, Just Tweet It, Twellow, Twitaholic, Twitter Poster, Nearby Tweets, The Twit Cleaner, Twuffer, Twittercal, TweetLater, Twitter Dmer, TwitPic, Twt Poll, Twit Wall, Group Tweet, Backupify, Twitter Counter, Tweet Beep, Twitsay, Tiny Chat, Twit Cam, Chirp Stats, Tweet Stats, Twitter Grader, Tweet Volume, Twitter Analyzer, Tweetmeme, Topsy, Whos Talkin, Trendistic, Twitscoop, Echofon, Tweetie, Brizzly, OpenBeak, Dial2do, Tweetdeck, Twittad, Twhirl, Twittload, Twittonary

Top 50 Twitter Apps http://www.tuttoaster.com/50-amazing-twitter-services-that-you-do-not-want-to-miss/ , June 2010

Open vs Closed?

- Side taking
- Camps

Open Platforms: Android

Open	It's Complicated
Proprietary / Controlled / Closed	

Android Ecosystem

Android Products

Google Services

Smartphone / Tablet Hardware	Android Open Source Project	Android App Store	Search, Gmail, Maps, Play, Pay

Privileged Partners	Any Manufacturers	Public Open Branches	Private Branches (e.g. ICS)	Open Development API	Any Developers

Google control some bits of it, restrict some bits and make other bits open.
The ultimate reason (of course) is to increase Google's reach in mobile advertising.

Open Platforms: Amazondroid

Open | It's Complicated

Proprietary / Controlled / Closed

Amazon Ecosystem

Amazon Products	**Amazon Services**

Tablet Hardware	Android Open Source Project	Amazon App Store	Kindle Store & Amazon Media

Quanta Computer Kindle Fire	Public Open Branches	Private Fork	Android Open Development API	Any Developers

Amazon controls most components and leaves other bits open.
The ultimate reason (of course) is to increase Amazon's reach in mobile retail, leveraging others' investment, but without being subject to Google's restrictions.

Open Platforms: Baidudroid

| Open | It's Complicated |
| Proprietary / Controlled / Closed |

Baidu Ecosystem

| Baidu Cloud Smart Terminal | Baidu Cloud |

| Smartphone Hardware | Android Open Source Project | Baidu App Store | Baidu Search, Music, Map, Netwdrive |

| Changhong H5018 | Public Open Branches | Private Fork | Android Open Development API | Any Developers |

Baidu controls most components and leaves other bits open.
The ultimate reason (of course) is to increase Baidu's reach in mobile, leveraging others' investment, and without being subject to Google's restrictions.

Open Platforms: Apple?

Open	It's Complicated

Proprietary / Controlled / Closed

Apple Ecosystem

Apple Products

Smartphone / Tablet Hardware	iOS / OS X

Apple iPhone/iPad	Components: Darwin, WebKit, cups…	Proprietary Code

Apple Services

Apple App Stores	iTunes, iBooks

Open Development API	Any Developers	Any Publisher

Apple controls almost all components and leaves some bits open.
The ultimate reason (of course) is to increase sales of Apple's hardware. It leverages others' investment, but also contributes heavily to some Open Source projects.

Android Openness Quantified

Open Governance Index (% open)	
Android	23%
Qt	58%
Symbian	58%
MeeGo	61%
Mozilla	65%
WebKit	68%
Linux	71%
Eclipse	84%

- **Access**: availability of the latest source code, developer support mechanisms, public roadmap, and transparency of decision-making
- **Development**: the ability of developers to influence the content and direction of the project
- **Derivatives**: the ability for developers to create and distribute derivatives of the source code in the form of spin- off projects, handsets or applications.
- **Community**: a community structure that does not discriminate between developers

Openness might not mean *Freedom*

- Reports surfaced yesterday (Sept 13th 2012) that Google prevented Acer from launching a phone using a rival operating system, by threatening to terminate its Android-related partnership with the hardware company.

- Google said that Acer signed away its rights to make Android-like phones not blessed by Google when it joined the **Open Handset Alliance**, a consortium designed to promote Android and create "greater openness in the mobile ecosystem."
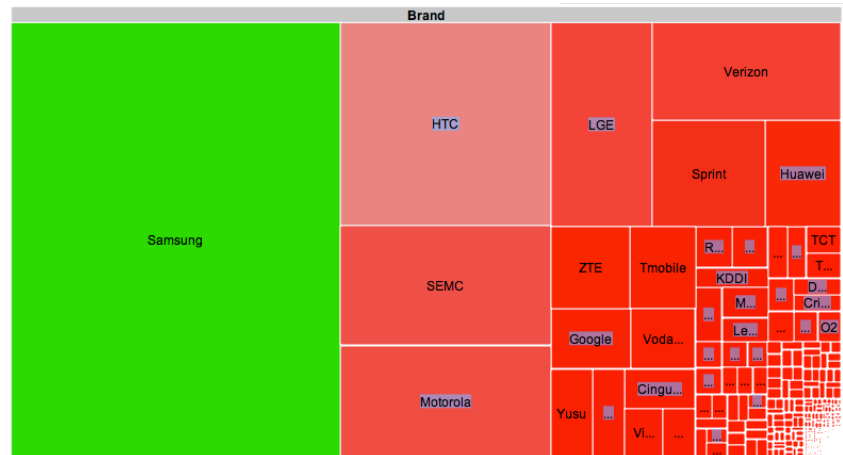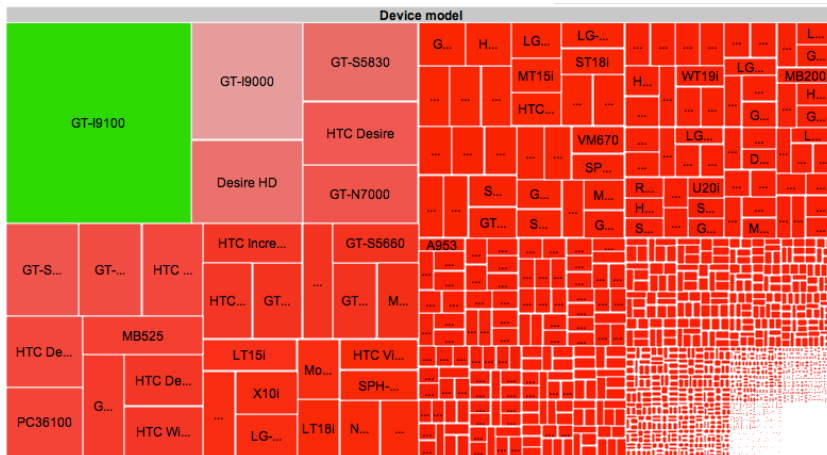
Acer didn't sign away all of its rights to make rival phones—after all, it does sell Windows Phones. But Acer wanted to release a phone using Alibaba's Aliyun OS, which can run Android apps but hasn't met the requirements of the Android compatibility program. That's a no-no because it leads to Android fragmentation, in Google's view.

http://arstechnica.com/gadgets/2012/09/google-blocked-acers-rival-phone-to-prevent-android-fragmentation/
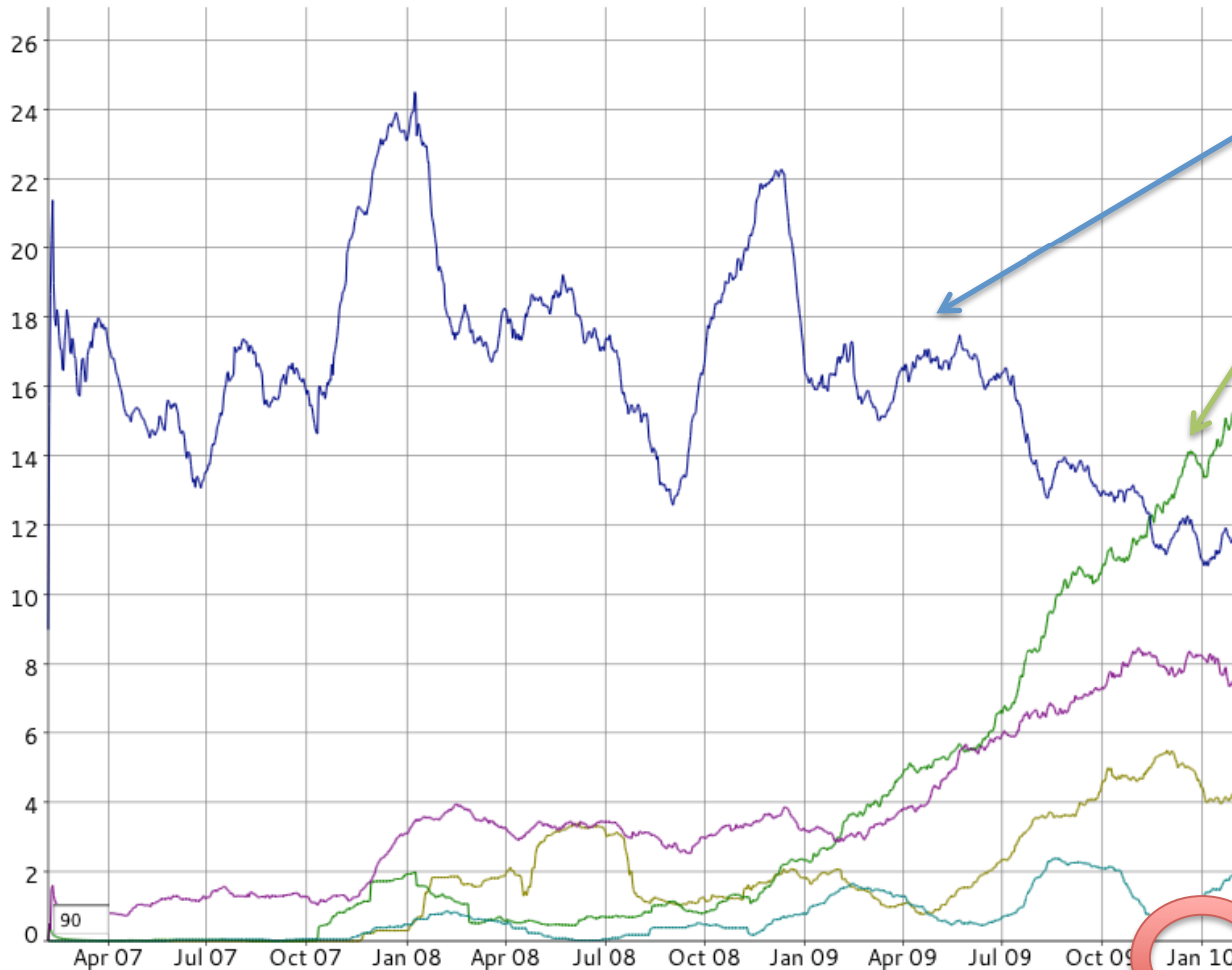
Building on Android

- 600 brands and 4000 devices
- Diversity, or fragmentation? The press can't decide.

The many faces of a little green robot
http://opensignalmaps.com/reports/fragmentation.php , June 2012

Who Develops Open Components?

- Apple, Google, Nokia, RIM etc

- Apple contribute to open components

Data runs out just when it gets interesting!

Walled Gardens

- Controlled ecosystems that promote the growth or availability of content at the expense of 'freedom' and 'openness'
  - e.g. Apple iPhone, Amazon Kindle, Facebook, AOL, Compuserve
  - Apple app store requires Apple approval for all apps
  - Facebook content only available for registered users

- Do these constitute a threat to the Internet itself?
  - Not everything built on an open platform has to be open
  - Walled gardens don't threaten the open platform ecosystem UNLESS they take over and become dominant

Why Open Systems are Vital

Evaluation

Did Germany make the right choice in relocating their post-unification capital from Bonn?

Synthesis

Create a set of guidelines for choosing alternative national capitals in a post-climate change Europe.

Analysis

What were the overriding factors in the choice of sites for the European parliament and commission?

Application

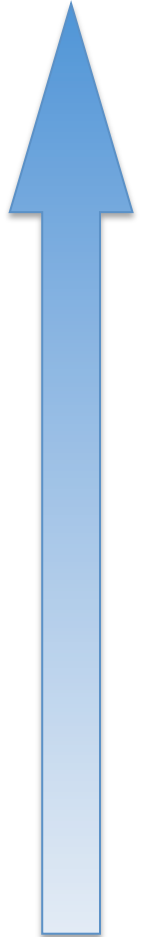*Choose the most appropriate capital for the Isle of Wight*

Comprehension

Why is Paris the capital of France?

Knowledge

What is the capital of France?

Increasing cognitive capabilities

Bloom's Educational Taxonomy demonstrates why closed systems are bad – human understanding is built on top of successively better knowledge platforms.

How New Knowledge Grows

knowledge apps

DBpedia

Wikipedia

Wiki

Web

Internet

- Horizontal generativity means that you can build new kinds of platform (iOS vs Android vs Win Phone)
- Vertical generativity means that you can pile platforms on platforms on platforms to achieve ever more sophisticated applications
- But it requires 'open' licenses across generations of platforms.

Closing Remarks

- Open vs Closed
  - isn't a binary divide, it's complicated
  - isn't Good / Bad
  - isn't Generative / Barren
- The tech press doesn't get platform building
  - it understands existing categories (e.g. browser, PC, phone) and promotes 'winners' and 'losers' according to market dominance
- HOWEVER building on open platforms is crucial
  - Especially for making progressively more sophisticated information systems