

Mobile Content Access - protecting the content owner

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agenda

◆ mobile content access overview

- ◆ state of the art technologies for content distribution in mobile

◆ issues and challenges

- ◆ end user issues
- ◆ challenges for the content owners

◆ tools and solutions

- ◆ DRM technologies
- ◆ emerging technologies for privacy protection

◆ conclusion

mobile content distribution

- ◆ commercial content distribution
 - ◆ news and information services (e.g. SCREEN3)
- ◆ personal content distribution
 - ◆ content sharing services for consumers
- ◆ where the two meet
 - ◆ "citizen journalism" where consumers submit content for redistribution e.g. BBC website, Yahoo! etc

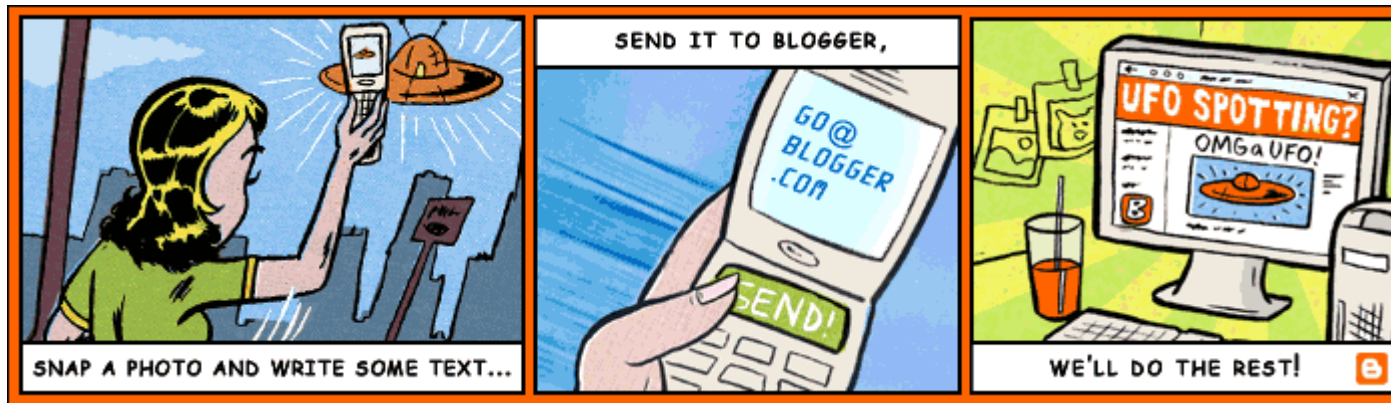
mobile news distribution - SCREEN3

- ◆ SCREEN3 pushes content and information to the user via the idle screen (zero click service)
 - ◆ Users see SCREEN3 content every time they view their home screen
 - ◆ When user sees an item of interest, they can click through to full versions of content or to receive advertised services
- ◆ Operator gains revenue from service subscriptions and purchase of linked content and services
 - ◆ deployed by Cingular (US), Telefónica (Europe), and operators in Asia
- ◆ Personalisation for SCREEN3
 - ◆ User inputs preferences for topics of interest, and can receive content appropriate to those interests



personal content sharing

- ◆ web-based services and blogs
 - ◆ YouTube, flickr, Picasa, Zonetag, Blogger



- ◆ peer-to-peer sharing
 - ◆ content sharing via Bluetooth, MMS, email etc
 - ◆ on-line sharing sites (of varying degrees of legality)

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mobile content distribution - challenges

- ◆ end user concerns about privacy
 - ◆ wanting choice in who can see their content and its annotations
 - ◆ control over where the content is further distributed
 - ◆ need to have a simple system which users can manage themselves
 - ◆ affects the content creator and people in the picture/video
- ◆ content owner concerns about protection of assets
 - ◆ rights protection to ensure content is not illegally copied
 - ◆ protection to avoid misuse and inappropriate use
 - ◆ asset tracking systems
 - ◆ simple license generation and tracking

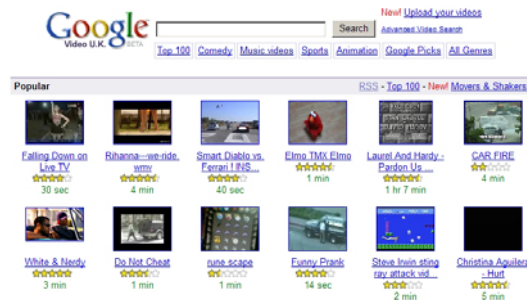
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DRM technologies

◆ proprietary solutions for commercial content

- ◆ Apple iTunes for movies, music and TV shows
 - ◆ *specific to Apple content on specified devices*
- ◆ Windows Media Digital Rights Management
 - ◆ *distributes license to play the music along with the content*
 - ◆ *specific to windows media player format content*
- ◆ Google Online Video Store
 - ◆ *only works with the player that downloaded the content*
 - ◆ *content cannot be viewed offline as the DRM solution must always be enabled to seek updates to the license*



DRM technologies

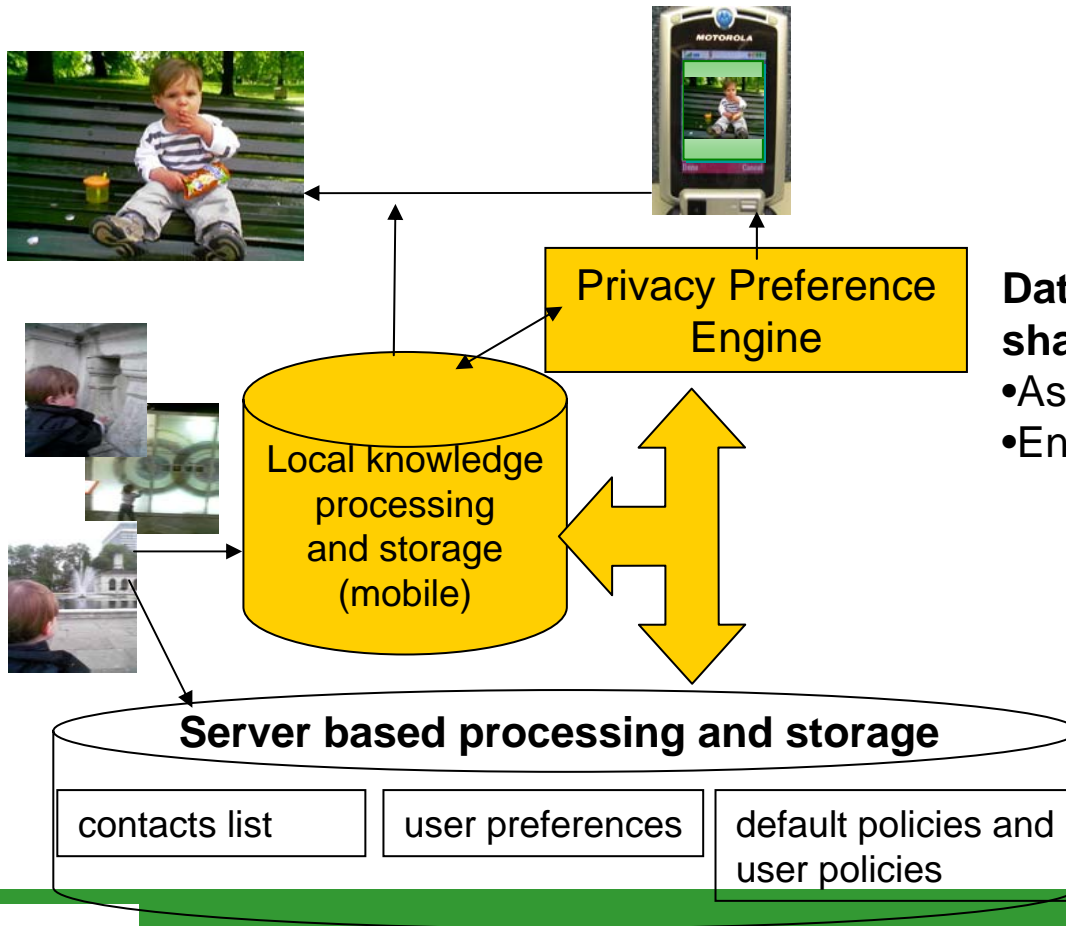
◆ Open Mobile Alliance DRM 2.0

- ◆ content providers can grant permission for media objects that define how they should be consumed
- ◆ independent of the media object formats and the given operating system or run-time environment
- ◆ covers games, ring tones, photos, music clips, video clips, streaming media
- ◆ content is distributed with cryptographic protection; hence, the Protected Content is not usable without the associated Rights Object on a Device.
- ◆ OMA-Marlin alliance aimed to support all platforms (OMA for mobile and portable, Marlin for PCs and IPTV services)



personal content protection

- ◆ solutions for commercial content may be too expensive and complex for consumers
 - ◆ aceMedia is seeking lightweight and extensible solution for content sharing
 - ◆ supporting the user in enjoying their content without privacy concerns



Data model plus rules for content sharing

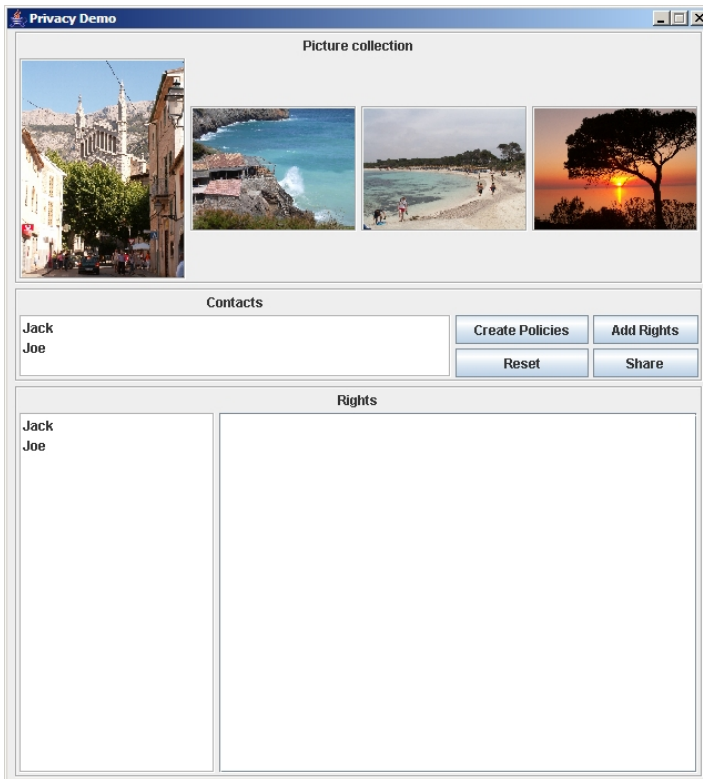
- Assist in user defining policies
- Encode and attach policies to content

Examples Rules

- Close friends to view and copy
- Friends view only
- No anonymous viewing

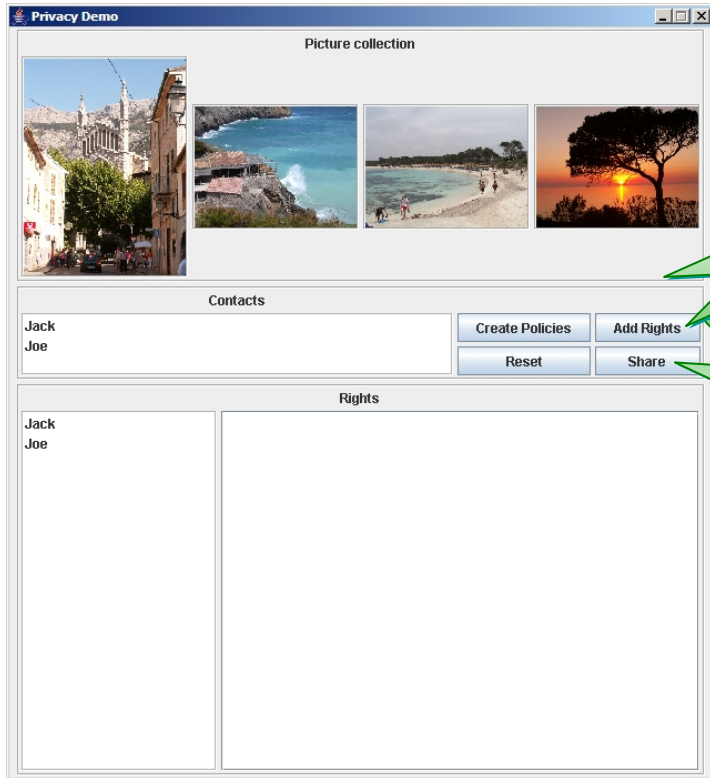
self-governing rules for content privacy

- ◆ simple interface to enable user to quickly express preferences for how their content can be used
 - ◆ intelligent processing hidden from the user to simplify the experience
 - ◆ aiming for multi-platform application (mobile, PC, set-top-box)

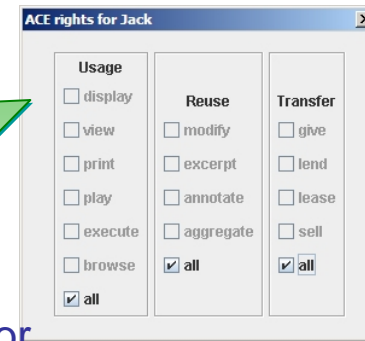


- ◆ sharing my pictures with Jack and Joe
 - ◆ different levels of trust for each
 - ◆ requires simple method to express my preferences and attach them to the images before sharing

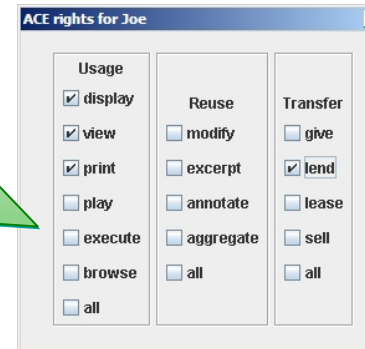
example content sharing



defining the rights for each recipient

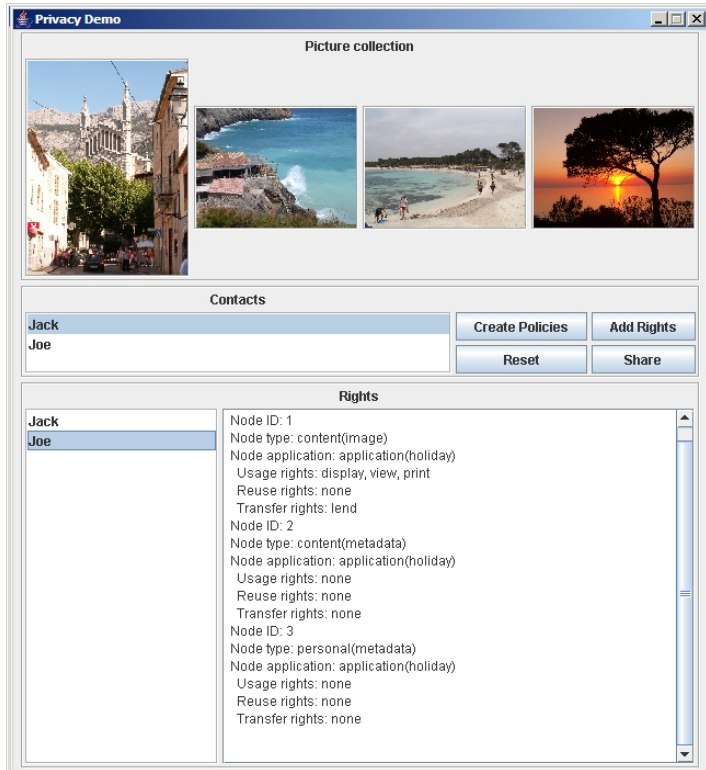


Jack



Joe

example content sharing



checking the rights applied

Joe and Jack receive the content

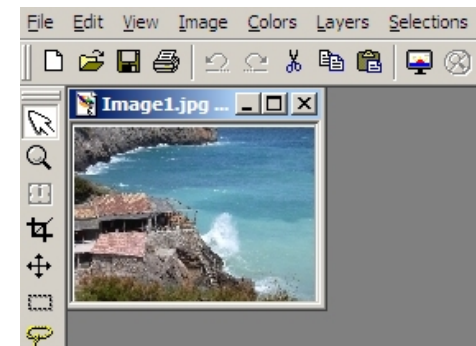


Joe opens picture editor



Error - you are not authorised to edit this picture

Jack opens picture editor



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conclusions

- ◆ mobile content sharing and content distribution are popular applications
- ◆ content owners are concerned about protection of assets
 - ◆ commercial DRM solutions can be applied in some application domains
- ◆ end users are concerned about privacy
 - ◆ fewer solutions available to end users
 - ◆ aceMedia has developed technology to assist

contacts

- ◆ Email : coordinator@acemedia.org
- ◆ Website : <http://www.aceMedia.org>

- ◆ **aceMedia partners** : Motorola Ltd, Philips, Queen Mary University of London, Fraunhofer, Universidad Autónoma de Madrid, Alinari, Telefónica I&D, Dublin City University, CERTH-ITI, France Telecom R&D, INRIA, Belgavox, University of Koblenz Landau