

# KAPTI

A receipt capture and analytics platform



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New Technology from DIT



## A novel automated receipt capture and analytics platform

KAPTI is a software platform which enables the automatic capture of data from receipts and printed documents, which can then be stored, categorised, or analysed. The approach used is more accurate than existing approaches, because it uses a dual machine/human process.

In a typical scenario, a user can use the KAPTI mobile app to take a picture of the receipt using their smartphone; the receipt is logged onto the KAPTI web platform which uses intelligent image processing and text extraction algorithms to digitise the data.

The system recognises when a digital image cannot be processed successfully and immediately passes the receipt to a crowdsourcing solution where the receipt data is verified by a human reader. Overall, this enables the platform to provide almost 100% accuracy of receipt translation.

The results of the crowdsourcing solution are also used to train the system, enabling KAPTI to intelligently learn from its mistakes and improve its accuracy on similar receipts in future runs.

The platform's features are interchangeable depending on the specific application. For example, the mobile app can be dropped and scanned documents uploaded directly to the web platform; the OCR can be changed; and the human verification can be in either an open-sourced solution or a closed crowd-sourced panel can be created.

## Applications

KAPTI provides a highly flexible software tool for capturing and digitising printed data such as receipts, invoices and statements, with total accuracy. It is therefore an ideal pre-packaged digital curation solution.

### Key applications include:

- Organisations seeking an easy white label solution to manage and track employee expense claims or other transactions.
- Companies such as private health insurers requiring customers to submit medical or other receipts for approval.
- Retailers seeking to monitor customer behaviour and analyse buying trends.
- Entrepreneurs seeking a digital data curation system upon which to build a new web application.

## Opportunity

The market opportunity for KAPTI is not limited to any particular business sector or application. However one particular area of consideration is claims management technology.

The demand for claims management technology is significant. According to Frost & Sullivan, the market was valued at €3bn in 2008.

France is the largest buyer of claims management solutions in the EU, while globally this is the United States and Japan.

UK and France are the largest purchasers. However the Asian market is showing the fastest growth at 8.5%.

There already exists a large ecosystem of technology companies supplying services in this area, including Irish-based SMEs.

## Advantages

KAPTI is a flexible, adaptable digital curation platform, which offers a number of unique features:

- **Comprehensive Functionality** - expense submission, analytics, e-statements, cloud backup, OCR and crowdsourcing features are all built in.
- **Error Reduction** - the machine/human process means that very accurate results are achieved.
- **Processing Speed** - the accuracy of results doesn't incur any significant delay and processing time is extremely fast.
- **Continuous Improvement** - data from obscured, corrupted or damaged receipts can be retrieved via crowdsourcing which feeds back to KAPTI and trains the system.
- **Customer Insights** - the collection of expenditure data enables the extraction of insights into customer purchasing behaviour.

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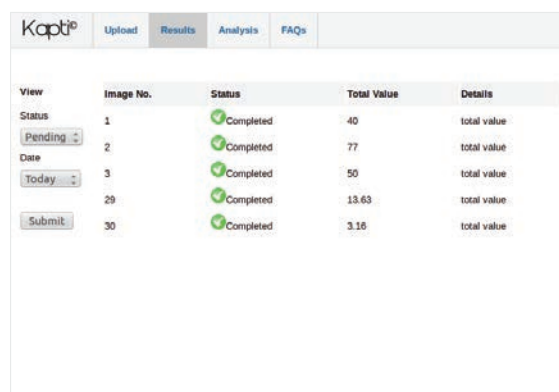
## Stage of Development

KAPTI was developed as a student-led project, emerging from the Applied Intelligence Research Centre (AIRC) in DIT's School of Computing.

DIT is currently seeking expressions of interest from companies interested in licensing the product as a white label solution for internal use, or from potential business partners interested in developing the technology for novel web applications.

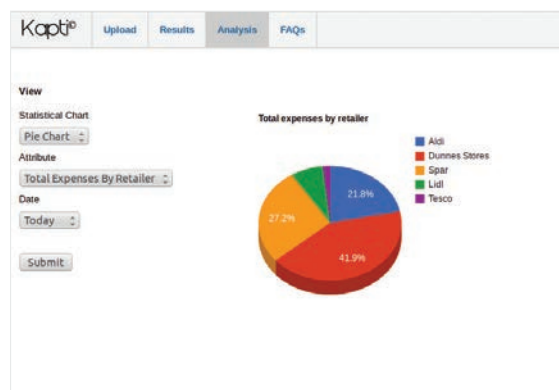
The software code related to the web application (php) and mobile app (android) is protected as secret know-how. The system is available for demonstration.

Further development work by a licensee will likely be required for the white-labelling of the product. Further work on the features, functionality and usability may be required if a new web application is the required output.



The screenshot shows the 'Results' tab of the KAPTI application. It displays a table with columns for 'Image No.', 'Status', 'Total Value', and 'Details'. The table contains five rows of data, all with a 'Completed' status. The 'Total Value' column shows values of 40, 77, 50, 13.63, and 3.16. The 'Details' column shows 'total value' for each row. There are also dropdown menus for 'View' (set to 'Pending'), 'Date' (set to 'Today'), and a 'Submit' button.

Image No.	Status	Total Value	Details
1	Completed	40	total value
2	Completed	77	total value
3	Completed	50	total value
29	Completed	13.63	total value
30	Completed	3.16	total value



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