

**Terms of Reference for
Shiny Developer Consultant with FIG AS SSA
Digital Financial Services (DFS) Portfolio**

Introduction

The International Finance Corporation (IFC), a member of the World Bank Group, is the largest global development institution focused exclusively on the private sector in developing countries. It utilizes and leverages its own products and services as well as products and services of other institutions in the World Bank Group to provide development solutions customized to meet clients needs. Applying its financial resources, technical expertise, global experience, and innovative thinking, the IFC helps partners overcome financial, operational, and political challenges. Clients view IFC as a provider and mobilizer of scarce capital, knowledge, and long-term partnerships that can help address critical constraints in areas such as finance, infrastructure, employee skills, and the regulatory environment.

In cooperation with the Mastercard Foundation (MCF), IFC is implementing The Partnership for Financial Inclusion, a joint initiative to expand and advance digital financial services in Sub-Saharan Africa. The Partnership also pursues an extensive applied research and learning agenda within the integrated Monitoring, Evaluation and Learning (MEL) program, with the objective of harnessing and sharing insights gained in program projects for the industry and the public good; and by applying insights from applied research back into operations and client-facing results. Additional information on the program and our publicly-available publications are available here: <http://ifc.org/financialinclusionafrica>

The MEL team is looking to incorporate data-driven practices to organize, understand, visualize and communicate its research. The MEL team seeks an experienced individual consultant to lead dashboard programming development as part of the teams data visualization strategy, as well as developing related interactive web-based tools. The dashboards will be developed in Shiny/R, and incorporate additional web development elements and relational database connectivity. The consultant will work under the auspices of the MEL team and in collaboration with other team members supporting the visualization strategy and dashboard development.

The assignment is expected to commence in April 2018 and continue to July 1, 2018. Work intensity is likely to be cyclical. Several deliverables (specific dashboards) will be finalized and delivered by/before May-June, 2018. Additional project delivery dates are to be determined, and discussed according to need and final scoping. Projects are expected to be delivered by July 1, 2018. Initial level of effort is TBD. Opportunity may exist to increase level of effort and/or extend contract engagement, depending need and performance.

Description of the assignment

The consultant will be responsible for turning datasets into interactive dashboards, and supporting the cleaning and structure of these datasets to be incorporated into the dashboards. The consultant will also be expected to know and apply best-practice design principles, and advise on design and implementation considerations. Additionally, the consultant should provide mentorship and guidance to other staff, both within the MEL team and to external stakeholders. This may include but not limited to preparing and delivering training, presentations; or ad-hoc support to resolve coding problems.

Key tasks include the technical guidance and support of the operational team on data analytics and visualization work for this project. These include but are not limited to:

- Building interactive dashboards, using R programming language and Shiny package; and related R-packages, such as Leaflet, Rpostgresql, and others
- Researching and communicating best practices of data visualization and discussing applications with the MEL team
- Identifying gaps/opportunities of the existing project and developing recommendations for future improvement (and ongoing maintenance) of dashboards in the user-friendly format
- Cross-supporting other the MEL team members and project dashboards in data analytics/visualization; and delivering both structured and ad-hoc training and coaching
- Developing guides/other materials for the visualization and research project, including documenting code, discussing programming methodology and user-guidance materials

Specific dashboard projects that the consultant will support may include:

- An interactive knowledge and research dashboard to visualize and disseminate qualitative lessons learned and research projects on Digital Financial Services (DFS); building off an existing prototype and concept (medium effort)
- A mapping of DFS operational projects, research projects and related operational data and results indicators; building off an existing prototype and concept (small effort)
- A dashboard that provides project portfolio data; building off an existing prototype and concept (small effort)
- A dashboard that provides interactive visualizations, drawing from an existing research study that provides comparative analytics and benchmarking for Digital Channels implemented by 9 Microfinance Institutions; using existing powerpoint slides that provide dashboard conceptual design (medium effort)
- An interactive web-based tool and/or dashboard to provide guidance on assessing digital channels assumptions for planning new channel implementation strategies; building of a

tool that will be first developed in Excel and migrated to an online implementation (effort TBD)

- A comprehensive interactive visualization mapping for digital financial services infrastructure in Sub-Saharan Africa; project not yet started (medium effort)
- An interactive web-based tool and/or dashboard to provide guidance on assessing DFS projects and market opportunities; building off an existing Excel-based tool that needs to be moved from Excel to a web-based implementation (effort TBD)
- An interactive web-based tool and/or dashboard to support teams to design DFS project objectives and structures using a survey-like approach to develop a document template; building off Word and Excel documents that articulate structures and selection-flows (effort TBD)

Selection Criteria & Required Qualifications

- Master Degree in Data Science, Computer Science, Physical Sciences or related field; or equivalent work experience
- Professional work experience 4-7 years software development, database management, business communications/data visualization, web development or related field
- Excellent programming skills in R
- Excellent experience developing interactive dashboards using Shiny package; applications should include links to portfolio and role in developing project
- Excellent skills in Javascript, CSS, DOM, relational database development including schema design and SQL
- Excellent familiarity with the Leaflet package and/or other geospatial analysis/visualization packages
- Additional experience in enterprise software development and languages a plus; as are experience using other prominent visualization tools (such as D3, Tableau, Power BI, Qlik)
- Graphic design skills a plus
- Experience working in diverse and geographically distributed teams
- Being a self-starter and problem solver; able to work independently; and comply with multiple, tight deadlines; and deliver highest quality results; applications should include references, which will be checked
- Creative, innovative problem solver: ability to turn data into compelling visualizations with the programming mettle to solve intractable problems to achieve results through beautiful code
- Familiarity with digital financial services, or microfinance or related sector a plus
- Fluency in English and excellent written and oral communications skills
- Preferred located in Washington, DC

Application

Qualified candidates are encouraged to apply by **April 22, 2018** by submitting:

- CV
- motivation letter, including discussion of understanding of assignment(s)
- **selected example(s) of related projects (dashboards, visualizations, web sites, web-tools) with URLs**
- Client/colleague references

Applications should be submitted by email to: **Oleksiy Anokhin** [oanokhin@ifc.org](mailto: oanokhin@ifc.org)