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SME Lending in a Post-COVID-19 World – The Role of Digitalization

June 2021

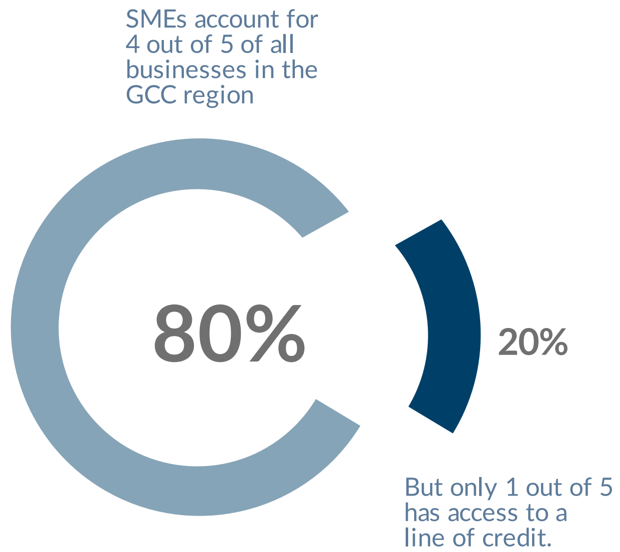
Executive summary

- The SME segment has been underserved in terms of access to credit since even before the COVID-19 pandemic, with only 20% of SMEs having access to a loan or line of credit
- In the presence of such a considerable ‘lending gap’, combined with a business environment greatly transformed by the pandemic, banks in the GCC region will need to revamp their existing operating models to be able to increase SME lending
- A key success factor for the operating model transformation is the adoption of rapidly advancing digital technologies, which will require banks to define and accelerate their digital transformation journey across the entire credit lifecycle
- Such a transformation has also been made conducive by the rapid advancements in digital technologies, and by new behaviors adopted by SMEs and their customers in response to the pandemic. These developments further coincide with the several national-level initiatives by various GCC governments to support the SME ecosystem.
- Even in the presence of such enablers, a digital transformation will require banks to address several challenges, including the need for a structured transformation framework, competition from new-age entities such as fintech start-ups, and a need to comply with evolving regulations
- Given the critical role played by SMEs in terms of the GCC region’s economic output and employment generation, it is imperative that regulators and banks work together to leverage digital technologies to provide ease of credit access and thus providing an enabling ecosystem for SMEs to thrive in

SMEs: An already underserved segment further adversely affected by COVID-19

One of the major challenges being faced by the banking industry in the GCC region due to COVID-19 is for banks to increase their lending to the corporate sector. This is especially true for the SME segment which has been historically underserved in terms of access to credit even since before the pandemic. For example, as per the Arab Monetary Fund, SMEs account for up to 80% of the businesses in the Arab region but only 20% of SMEs have access to a loan or line of credit.[1] The following figures show the role of SMEs and the degree to which they are underserved by banks in context of the Arab region and the UAE, respectively.

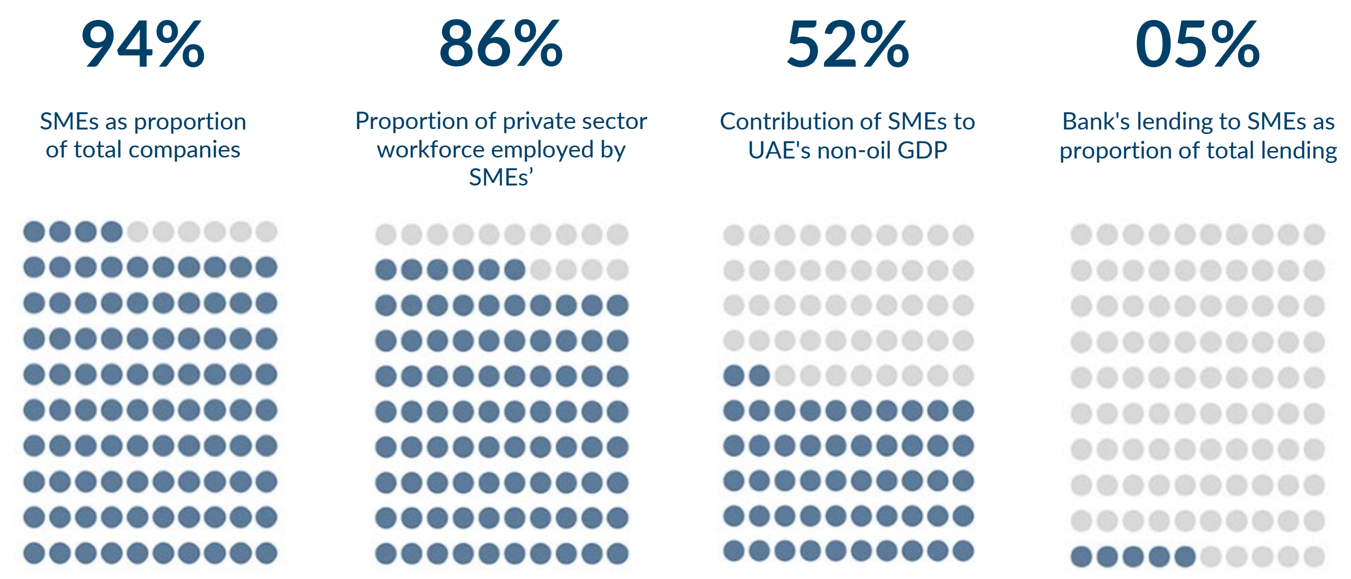
The COVID-19 pandemic has only exacerbated this challenge where SMEs, according to the European Bank for Reconstruction and Development (EBRD), 'find themselves in financial distress, lacking liquidity and in operational stagnation.[2] The World Economic Forum has also stated in its recent study[3] that the SME segment has long found it difficult to access credit based on traditional lending models. This difficulty has been further compounded by SMEs' credit quality issues and low operating buffer with respect to liquidity and margins resulting in an overall apprehension around their business sustainability.



Thus, in this context of traditional lending models proving to be sub-optimal when it comes to lending to SMEs, the considerable 'SME lending gap', and a business environment greatly transformed by the COVID-19 pandemic, banks in the GCC region will need to relook at and, in some cases, completely revamp their existing operating models for SME lending. Combined with the national-level initiatives launched by many GCC economies to support growth of the SME segment and the significant competitive advantage that early mover banks are likely to benefit from, the post-COVID-19 era may provide the right occasion for banks to leverage the SME lending opportunity and expedite initiatives for an operating model revamp.

This paper explores the key impact areas across the credit lifecycle that may need to be reviewed as part of such a revamp, and how recent advances in digital technologies may help banks achieve the required transformation, thus leading to an enhanced SME lending ecosystem.

Country Focus: UAE



Sources:
Arab Monetary Fund (AMF)
S&P Global[4]*, UAE Central Bank, UAE Ministry of Economy*

1. SME lending gap in region must be filled, urges AMF | April 2017 | www.thenationalnews.com/business/sme-lending-gap-in-region-must-be-filled-urges-amf-1.52640
2. COVID-19 Response – Guidance for SME Survival and Continuity | May 2020 | www.ebrd.com/work-with-us/projects/tcpsd/13372.html
3. How fintech can help SMEs recover from the impact of COVID-19 | May 2020 | www.weforum.org/agenda/2020/05/fintech-can-help-smes-recover-covid-19/

4. Credit guarantees will boost SME lending in UAE, but risks remain for banks | July 2020 | www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/credit-guarantees-will-boost-sme-lending-in-uae-but-risks-remain-for-banks-59360658

A revamped operating model for SME lending

Banks in the GCC region have historically faced several hurdles towards lending to the SME segment such as unavailability or unreliability of financials, insufficiency of credit history, inadequacy in terms of business planning or projections, financial indiscipline and liquidity mismanagement, high promoter dependency and flight risk. Lack of visibility related to future cashflows also makes it difficult for banks to proactively restructure stressed borrowers in their existing SME portfolio[5]. As the EBRD study further goes on to highlight, 'many SMEs do not have access to specialist professional (legal and financial) advisors to support either their efforts at operational and / or financial restructuring or to help analyze their contractual position as a result of the crisis.'

To increase lending to this segment and take advantage of the opportunity presented by the lending gap, banks will need to come up with innovative solutions to address these issues, and, in the process, revamp their traditional approach towards SME lending. The figure on the next page highlights some of the key changes warranted across the credit lifecycle for banks to consider in their operating model, centered around addressing the practical, on-the-ground challenges pertinent to the SME segment in the current environment.

5 For further reading, refer to Protiviti's previous paper on 'Sustainable Restructuring – A Tool for Banks to Tide over COVID-19' that emphasizes the use of restructuring by banks as a proactive tool towards ensuring long term resilience and strength of their lending portfolio

Initiation

- Simplify account opening process
- Streamline repetitive tasks such as factsheet generation, due diligence, etc.
- Enhance overall customer experience

Underwriting

- Leverage data from non-traditional sources
- Use quick-decision models
- Streamline credit application process for larger volumes
- Address challenges related to lack of credit history and risk-based pricing

Approval

- Streamline approval process to handle large volumes
- Redesign approval process flow to enable quick decision in go / no-go cases & increase focus on 'grey zone' or exceptional cases

Risk review

- Support risk review in areas of default risk & financial analysis through insights from data
- Incorporate dynamic non-conventional data insights to compensate for lack of updated or reliable financials

Monitoring & reporting

- Combine conventional monitoring with more dynamic or near-real time early warning indicators from non-conventional sources
- Enhance decision support for corrective action planning.

Admin. & disbursement

- Strengthen processes around customer authentication and enforcement of collaterals and covenants

Collection & remedial

- Enhance decision support for identification of most appropriate remedial action or restructuring cases

Guiding Factors

External		Bank Specific	
Compliance with rapidly-evolving regulations	Competition from new-age players such as fin-techs	Alignment with business & risk strategy	Transformation roadmap addressing customer behavior

The role of digitalization

One of the principal success factors for achieving an effective operating model transformation is the adoption of rapidly evolving advanced digital technologies. Achieving the business objectives highlighted in the previous section will require banks to define and accelerate their digital transformation journey across the credit lifecycle. This section details how digitization can help address such business objectives along with the mapping of the most appropriate enabling technology for achieving the same.

Initiation

This stage typically involves understanding borrower requirements, requesting relevant information and documents from the borrower, conducting preliminary due diligence and financial spreading, and creation of the borrower in bank's internal systems for new borrowers, by the business team or relationship manager within the bank.

Listed below are illustrative digital initiatives that banks may consider at this stage.

- Use mobile and web applications to offer products and services and enable loan applications. Simplify account opening process through online submission of documents and populate details in a structured format using optical character recognition (OCR) or natural language processing (NLP).
- Use robotic process automation (RPA) for factsheet generation
- Automate preliminary due diligence through data mining and analytics / interfacing with external applications to check against blacklists, defaulter lists, ongoing litigations, ESG breaches etc.
- Enhance customer experience / servicing using AI-powered chat bots to manage customer interactions and address queries, and VR-based virtual branches

Case Study: Customer & portfolio optimization analytics for a GCC-based lender

Objective:

One of the leading GCC lenders wanted to develop analytical models to identify business growth opportunities and enhancing its revolving credit products offering.

Protiviti's Approach:

Protiviti team developed a solution based on multi-dimensional attributes - transaction history, customer demographics, product holding etc. using following methods:

- **Model 1:** Offer generation using collaborative filtering
- **Model 2:** Low limit utilizer identification model using K-prototyping and KNN unsupervised learning
- **Model 3:** Portfolio optimization model using quantification-based analysis

Benefits:

The models were implemented for a particular pilot segment and were subsequently applied across the entire portfolio

63% Reduction in runtime (model 1)

57% Reduction in runtime (model 2)

90% Reduction in runtime (model 3)

In addition, the models improved customer retention, promoted cross sell and upsell opportunities based on the customer segmentation

The lender generated revenue opportunity of USD 1.4 mn from the initial run of the 'Offer Generation' module

Underwriting

This stage involves the start of the credit application process by the business team or relationship manager within the bank. It typically encompasses assessment of the borrower's creditworthiness through credit risk assessment or decisioning models, loan structuring in terms of collateral or guarantee requirements, and pricing of the facility.

Listed below are illustrative digital initiatives that banks may consider at this stage.

- Use OCR for data capture from non-traditional sources such as stock statements. Use NLP for analyzing data from sources such as bank statements through structured capture of transaction narrations.
- Use AI / ML based credit-decisioning models to identify auto-approval / auto-rejection cases. Assess cases in the middle gray-zone in the conventional manner through a full-fledged credit review.
- Use workflow-based collaborative solutions to prepare credit applications. Automate AML / KYC checks through a combination of OCR, RPA, and AI / ML-based tools.
- Use data mining and analytics to leverage information from non-traditional sources such as history of past litigation, default on personal loans by promoter etc.
- Use AI / ML models for psychometric testing (of promoters) in cases where there is no credit history
- Use ML-based segmentation algorithms for risk-based pricing

Case Study: Cross-selling recommendation model for a bank

Objective:

Improve the efficiency of the bank's cross-sell program based on focused targeting.

Protiviti's Approach:

Statistical model developed using the following data dimensions:

- Account conduct data
- Demographic data of promoters
- Cross product holdings
- Spend analysis of promoters

Benefits:

The model helps in providing answers to the following queries:

What - choice of product
Whom – selection of customers
When - timing
How – contact strategy

80% Responders captured in
30% customer base resulting in
50% marketing savings

In a business-as-usual (BAU) scenario, the bank would target 78% of the customers base to solicit 80% of responders

The model captures 80% of the responders in 30% of the customer base resulting in marketing saves of 50%

Risk review

This stage involves an independent risk assessment and review of the completed credit application by the credit risk team or risk officer within the bank. While such a stage, by definition, requires expert judgement and consequent manual involvement, digitization initiatives should focus on providing decision-making support to the risk team, largely by gleaning meaningful insights from the large amount of unstructured, qualitative data.

Listed below are illustrative digital initiatives that banks may consider at this stage.

- Use ML-based statistical risk models (like Altman Z-score for probability of default and Beneish M-score for earnings manipulation) to supplement risk review
- Use data mining and analytics to generate sentiment score based on non-traditional qualitative data (such as social media sentiment, Amazon reviews, Google reviews, Glassdoor reviews etc.) to supplement risk review

Approval & administration

This stage involves approval, rejection, or request for resubmission of the completed credit application by the delegated credit approval authority within the bank, followed by post-approval administration and documentation.

Listed below are illustrative digital initiatives that banks may consider at this stage.

- Use rule-based, workflow-enabled solution for CA approval
- Use workflow-based exception management system
- Use advanced customer authentication techniques such as biometrics or e-signatures

Monitoring

This stage involves continuous monitoring and review of the credit portfolio for early signs of deterioration in credit quality, by the business as well as risk teams within the bank. Such monitoring is done both at a portfolio and individual borrower levels and may involve analysis of data from sources that are internal as well external to the bank.

Listed below are illustrative digital initiatives that banks may consider at this stage.

- Combine conventional monitoring with early warning indicators from non-conventional sources. For example, use AI / ML-based scoring models combining inputs from account performance (data mining and analytics), sentiment analysis (data mining and analytics from sources such as social media sentiment, Amazon reviews, Google reviews, Glassdoor reviews etc.), promoter's bureau score (external interfacing), collateral monitoring (data mining for market-linked collateral), capacity utilization estimate through monitoring of electricity and water consumption (data mining and analytics), point-of-sales transactions monitoring (data mining and analytics, NLP)
- Use GPS-based markers and technologies such as drones for physical inspection of customer factory
- Use ML-based decision tree models for identification / recommendation of most appropriate corrective action

Case Study: Credit limit increase model

Objective:

The bank required an analytics-driven solution to identify borrowers that would be eligible for a credit limit increase based on their past account conduct

Protiviti's Approach:

Protiviti team assessed over 600 variables related to customer demographics, account behavior and transactions to identify key eligibility indicators of increased credit limits

- Step 1: Feature selection using K-means clustering to remove irrelevant features and correlation measure to eliminate non-redundant features
- Step 2: Supervised learning using logistic regression

Benefits:

The model targets borrowers that will increase utilization based on the revised limits thereby adding revenue for the business

600 Features analyzed
80% Accuracy in cluster identification
$3 mn Increase in revenue

Business also saved a huge cost of evaluating credibility of every prospective borrower by targeting only those identified by the model

The business achieved an increase in revenue of USD 3 mn post-implementation

Collection & remedial management

This stage involves collection of repayments from performing borrowers or management of accounts with actual delinquency to minimize risk, prevent losses, maximize recovery, and restore profits through recovery or restructuring.

Listed below are illustrative digital initiatives that banks may consider at this stage.

- Use ML-based decision tree models for recommendation of restructuring decision
- Leverage recovery and collateral-based predictive analytics to determine loss given default at a borrower or portfolio segment level

Case Study: Attrition-prevention model for a GCC-based bank

Objective:

A large GCC-based bank wanted to develop an attrition model to identify customers with a high probability of exiting their existing relationship with the bank within a specified time period

Protiviti's Approach:

Protiviti team delivered 2 machine learning-based modules that predict customers attrition

- Model 1: Attrition model (voluntary closure) using Synthetic Minority Up-scaling Technique (SMOTE) and supervised learning (Cat-boosting)
- Model 2: Spend loss model (without official closure) using supervised learning (Cat-boosting)

Benefits:

The models were implemented for a particular pilot segment and will be subsequently applied across the entire portfolio

55% Improvement in Model 1 accuracy
80% Improvement in Model 2 accuracy
$6.5 mn Partial payment revenue booked based on models

The model provided data-driven insights to take appropriate actions for customer retention

Based on the output of the analytical model, the business was able identify and book 'Scheduled Partial Payment' revenue of USD 6.5 mn

The right time for digitalization

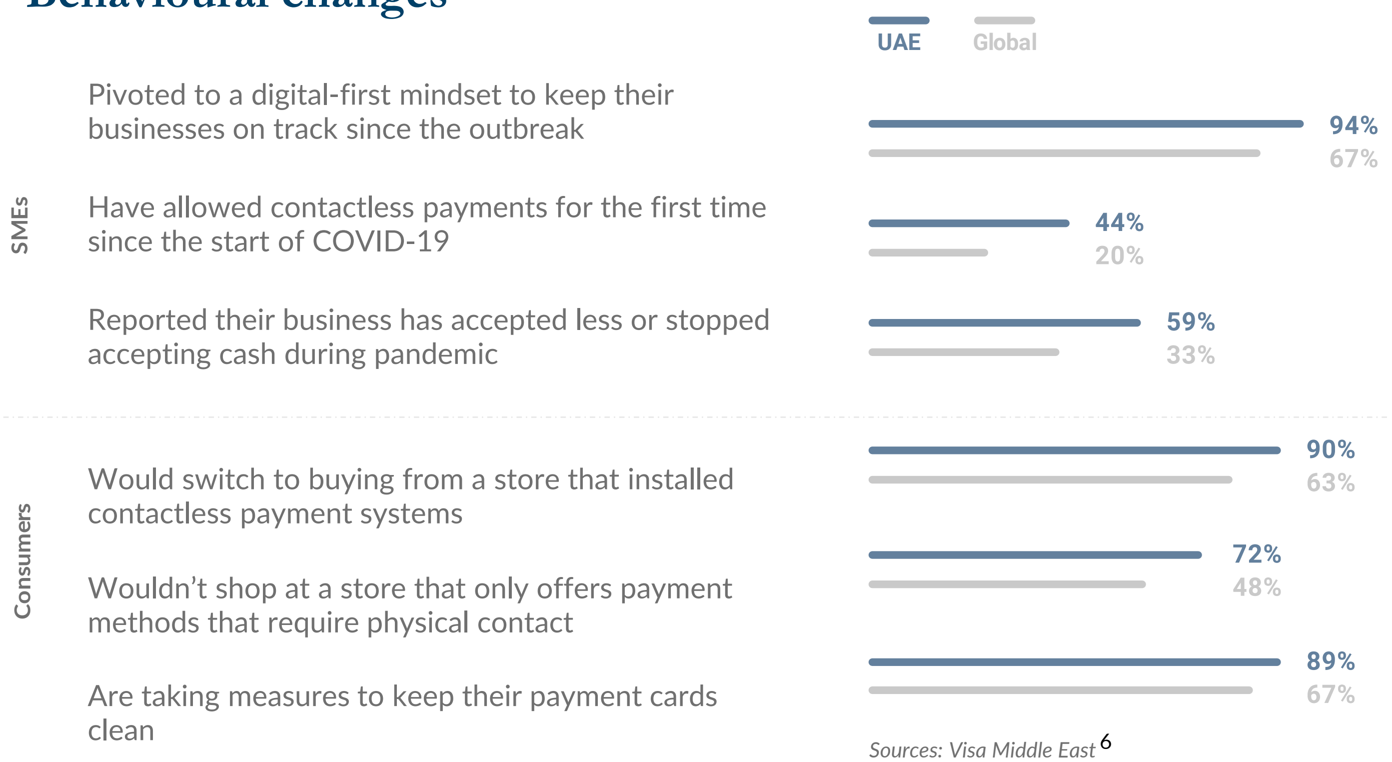
In addition to the rapid advancements in capabilities and expanding applications of digital technologies, the COVID-19 pandemic has resulted in two other changes that may act as additional enablers for a successful digital transformation.

Firstly, the shift to the remote working model coupled with the focus on contactless interactions is likely to increase the customer acceptance levels and regulatory support required to successfully implement digitization initiatives.

Secondly, new behaviors adopted by SMEs and their customers to adapt to the changing physical and social environment triggered by the pandemic have resulted in a rapid shift to digital channels. This has not only increased the universe of SMEs that can be addressed by banks by shifting to digital imperatives but has also increased the amount of transaction data generated in digital form that can be used for further analysis by banks for onboarding of new clients or monitoring existing ones.

The following figure shows some of the key changes in behavior adopted by SMEs and consumers in UAE in response to the pandemic, that are conducive for banks' digital transformation initiatives.

Behavioural changes



Sources: Visa Middle East [6]

6. Visa study finds 94% of small businesses and 90% of consumers in UAE have adopted new behaviors amid COVID-19 | August 2020 | ae.visamiddleeast.com/en_AE/about-visa/newsroom/press-releases/prl-19082020.html

In addition to the above enablers, banks are also likely to benefit from several national-level initiatives by various GCC governments to support the SME ecosystem. Examples of such initiatives include the launch of the General Authority for SMEs 'Monshaat' in the Kingdom of Saudi Arabia, provision of interest-free funding support by Kuwait's National Fund for SME Development, accelerator programmes launched by Bahrain's national labor fund Tamkeen, and the incorporation of enhancing SME financing as part of Oman Development Bank's strategic objectives. The adjoining figure deep-dives into various SME-focused national initiatives launched in UAE that may boost banks' SME lending efforts.

UAE initiatives

Onboarding checks
CBUAE initiatives such as e-KYC for onboarding and fraud checks (against promoters) in place

Movable collateral registry
Covering movable collateral such as inventory, receivables, FDs, or current accounts with moving balances etc.

Receivables and SCF
Availability of national-level receivables and supply chain financing platforms

Credit guarantees
Government-backed credit guarantee scheme in place with the Khalifa Fund and Mohammed Bin Rashid Fund

Incentivizing security cheques
Decriminalization of bouncing of cheques and its coverage under civil law (to be finalized)

Dispute resolution
Creditor protection and fast-track dispute resolution under Bankruptcy and Insolvency Act

Mezzanine support
Mezzanine capital available under Khalifa Fund and Mohammed Bin Rashid Fund

Lower capital requirements
Concessional risk weights for SME lending resulting in lower capital requirements for banks

Challenges

Need for a structured digital transformation framework

Given the myriad of emerging digital technologies and their potential applications, successful adoption of digital initiatives towards pursuit of revamped business objectives will require banks to devise a structured digital transformation framework. Such a framework must be practical and aligned to the bank's overall business context and strategy, with its implementation being driven by the senior management's clear commitment to digitization.

Competition from new-age entities

In terms of leveraging digital technologies, new-age entities such as digital banks and fintech start-ups are likely to have a significant advantage over traditional banks. Such entities will benefit from being structured from the ground up around offering a seamless digital experience to their customers and from being agile due to their relatively smaller size. Lack of legacy issues that often plague traditional banks are also likely to offer new-age entities a significant leg-up and will require banks to firmly adopt the principles of design thinking and agility to be competitive while planning their own transformation roadmap.

Case Study: Data & digital maturity assessment for a financial services company

Objective:

The client required a data and digital maturity assessment along with the following additional objectives:

- Identification of avenues to improve the overall digital and data maturity ratings
- Identification of primary and secondary owners for proposed digital and data initiatives critical to success in the digital age

Protiviti's Approach:

Protiviti team assessed the client's data and digital maturity on a 4-point maturity rating scale based on evaluation of the following dimensions:

- **Data dimensions:** Data strategy, quality, governance, analytics
- **Enablers:** Platform and architecture, systems and supporting processes

Benefits:

Protiviti conducted a high-level review of 100+ processes of various departments with the primary focus on digitalization, data governance and analytics

30+ Initiatives

80+ Observations

100+ High-level process reviews

80+ observations were made during the diagnostic reviews and suitable recommendations were made in line with company's vision and strategy

Data and digital initiatives mapped for phased transformation with prioritization of customer-facing applications and processes

Need to comply with regulations and ensure security in a rapidly evolving landscape

Banks will require to be abreast and comply with rapidly evolving and geographically fragmented regulatory frameworks such as those related to data privacy. Further, they will also need to identify and put in place safeguards against potential frauds and cyber security risks through a dynamic vulnerability assessment plan. The scope and complexity of these tasks will increase significantly as the number of external applications, digital channels and interfaces that are part of the bank's digital imperatives increases.

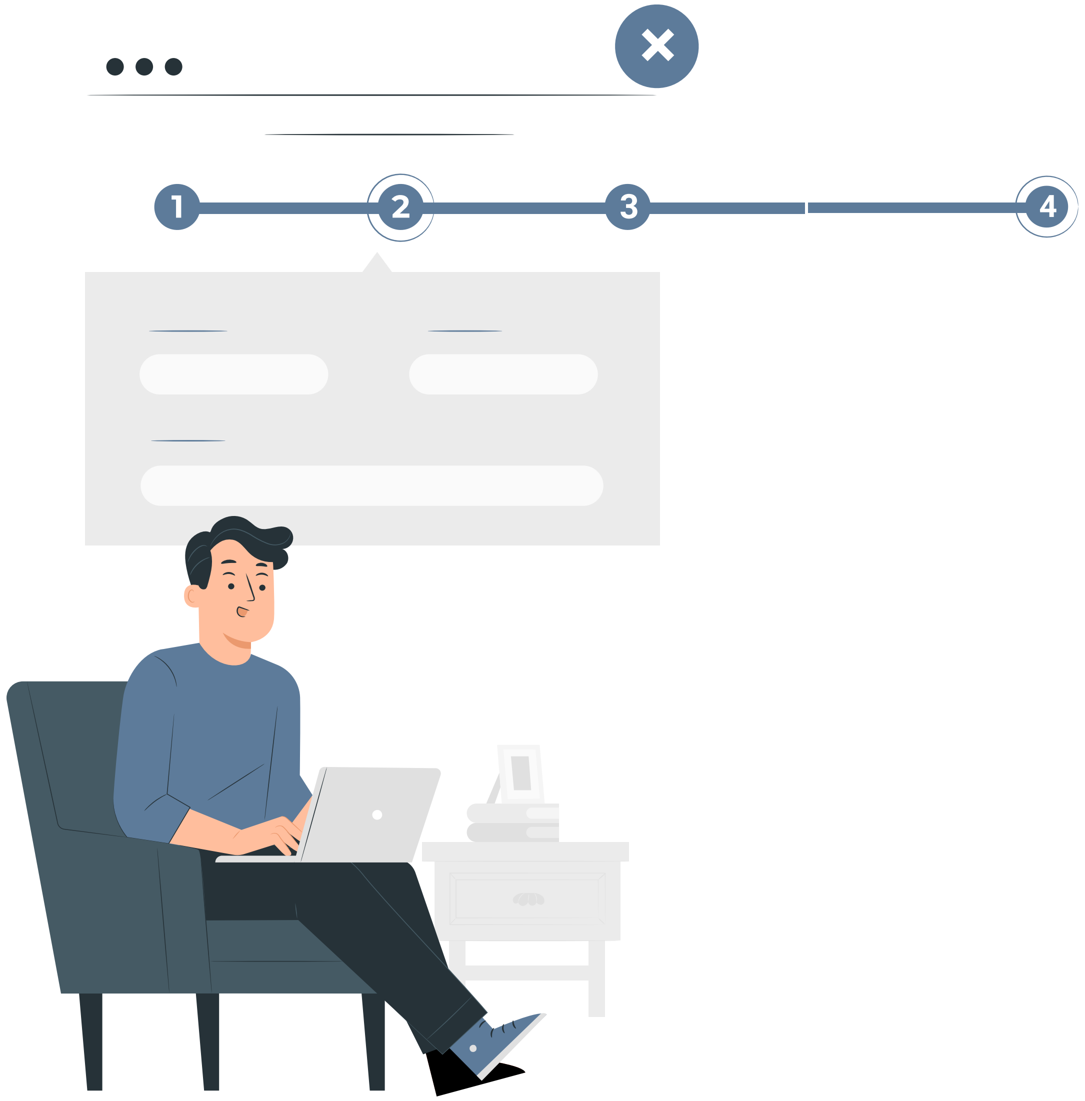
Need for integration among different systems

Towards achieving their digitization objectives, banks may put in place various technological systems (often from different vendors) and models that address specific processes within the credit lifecycle. Banks will need to implement robust technologies for integration between such systems to facilitate seamless data flow and ensure correctness of operations and quality customer experience. This may require banks to put in place a well-defined, centralized data architecture right from the start of their digitization journey, and undergo a comprehensive data cleaning, structuring and aggregation exercise for existing systems. Banks must also ensure that a unique identification string is tagged to all data pertaining to a single customer or facility across multiple systems.

Ongoing role of stakeholders for a sustainably active SME lending ecosystem

The pursuit of a revamped operating model to enhance credit access to SMEs in the current environment will require banks to adopt a well-thought-out digital transformation roadmap. The roadmap should ensure that revamped business objectives are aligned to the bank's larger business and risk strategy before identifying the enabling digital imperative. At the same time, banks will need to contextualize their roadmap to regional nuances to ensure on-the-ground success. For example, given the GCC region's traditional reliance on conventional banking channels and in-person interactions, banks may have to segment their customers based on their adaptability and put in place a phased roll-out of digital imperatives, and gradually re-purpose branches as customers move to digital channels.

Banks may also consider collaborating with fintech start-ups to generate synergies in terms of agility, skillset, and market reach. On the demand side, while the current situation created by the COVID-19 pandemic may force SMEs to expedite their adoption of digital channels, banks may further accelerate this adoption by conducting relevant training programs and awareness sessions for their existing and prospective customers.



Regulators on their part will need to ensure a supportive environment that encourages banks' digital transformation efforts. This may involve alignment of existing regulations to reflect the changing dynamics brought about by emerging technologies and publishing of consultation papers to address new challenge areas. For example, the use of advanced machine learning 'black-box' algorithms for credit decision-making may reduce banks' ability to explain the detailed working of such models or the contribution of individual variables towards the final output. Regulators may assist banks to adopt such models by mandating and overseeing a parallel run wherein the new-age 'black-box' models and the traditional statistical processes / models are both applied in parallel over a trial period. The transition to advanced models may then be allowed by the regulator after comparison of their performance with that of the incumbent process / model and against regulator's own benchmarks.

Governments can also work with regulators to proactively help boost SME lending by standardizing and enhancing the data availability around the segment. Some initiatives that can be taken in this space may include standardizing the definition of SMEs across the region, establishment of centralized repositories such as those for collateral and default data and simplifying the KYC norms and documentation requirements in context of the practical data challenges observed in the segment.

Given the critical role played by SMEs in terms of the GCC region's economic output and employment generation, it is imperative that regulators and banks leverage digital technologies to provide ease of credit access and thus provide an enabling ecosystem for SMEs to thrive in.

About Protiviti

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